### Vulnerability Assessment Survey

The community-wide survey was conducted from Jun 30<sup>th</sup> to July 26<sup>th</sup> and collected a total of 130 responses. This survey presented information about the changes expected in Carmel, and asked what impacts are already being seen and what, if any, specific concerns exist. Some of the responses collected were used to build the list of vulnerabilities per sector to use in the stakeholder workshop and contributed to this assessment report.

Specific efforts used to collect responses, include:

- Designed a newsletter template, which was shared with the Communications Department of Community Services and began circulation on Friday, June 30<sup>th</sup>. Additionally, a survey link was displayed on Carmel's social media platforms like Instagram to reach a wider audience. To ensure accessibility, the newsletter provided two links-one in English and the other in Spanish
- We engaged in a collaborative effort with two community organizations, namely, the Carmel Community Library and the Monon Community Center. During this partnership, we supplied them with various materials, including QR codes and hard copies.
- The provided materials were designed to cater to everyone with access to a phone, allowing them to easily scan the survey. Simultaneously, individuals without internet access or the elderly were encouraged to use the hardcopies to share their insights.
- Inclusivity was a priority, and the survey was made available in both English and Spanish considering the demographics of Carmel, where 82% of residents identified themselves as white and 6% as Hispanic or Latino.
- The Carmel Green Initiative, a non-profit organization dedicated to promoting environmental responsibility and addressing climate change challenges, provided support by publishing the survey on their website and social media channels.

#### List of questions asked, and summary of all responses are below:

The survey began by presenting Climate Change Impacts in Carmel, providing the public with an overview of historical data and projected changes in various variables identified during the elaboration of the Climate Trends Primer in Carmel.

- There has been a significant increase in our annual highest maximum temperature, currently reaching 98.9°F. Projections indicate that this trend will continue, with temperatures surpassing 101.9°F in the next 30 years
- Precipitation days have declined from an average of 189.1 days per year to 185.9 days per year, with projections indicating a further decline to 181.3 by 2050s.
- While the frequency of precipitation may decrease, the intensity of extreme rainfall events could increase, potentially causing intense flooding. This can be attributed to the expected rise in average annual precipitation from 39.6 inches to 43.6 inches in the coming years.
- The number of days with temperatures exceeding 95°F has significantly risen in recent years. We used to have an average of 13.7 days (1976-2005), but now it is 36.6 days. Projections indicate a potential increase to 51.8 days by the end of the 2060s.
- Winters are becoming milder, with a decrease in cold days from 23.7 to 10.7 over the next 50 years. While appealing, this has concerning implications, such as an extended allergy season and increased pest activity, which can worsen disease pressures.

• Changes in local vegetation may alter future seasons, deviating from traditional fall and winter patterns. Constantly warm conditions could result in year-round green trees, resembling equatorial countries. This transformation will significantly impact the local ecosystem.

### Question 1: How concerned are you about climate change for our community? Choose one (required)

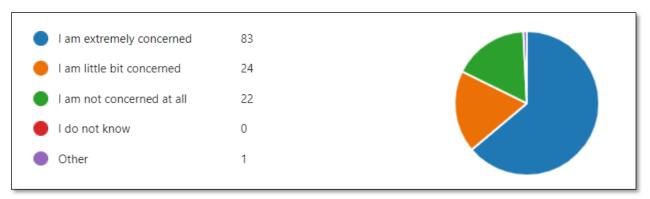


Figure 1. Summary Results from Q1 on Climate Community Survey

A total of 130 people responded to this question. Among them, 82% expressed concern about the issue, with 64% being extremely concerned and 18% having some level of concern. On the other hand, 17% of respondents stated that they were not concerned at all.

# Question 2: How much do each of the following potential climate impacts concern you? Select one for each: Not concerned; Some concern, or very concerned (required)

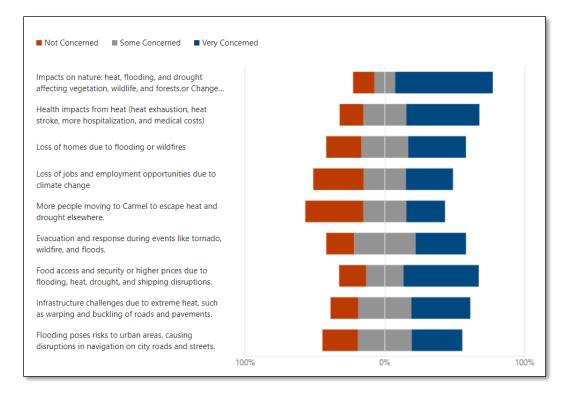


Figure 2. Summary Results from Q2 on Climate Community Survey

A total of 130 people responded to this question and some of the survey results regarding their concerns are:

- Impacts on Nature from heat, flooding, and drought affecting vegetation, wildfire, and forest: 15.4% were not concerned, 14.6% had some concerns, **and 70%** were very concerned.
- Health Impact from Heat such as stroke more hospitalization and medical costs: 16.9% were not concerned, 30.8% had some concerns, and 52.3% were very concerned.
- Loss of Homes due to Flooding or Wildfires: 25.4% were not concerned, 33.1% had some concerns, and 41.5% were very concerned.
- Loss of Jobs and Employment Opportunities due to Climate Change: 36.2% were not concerned, 30% had some concerns, and 33.8% were very concerned.
- More People Moving to Carmel to Escape Heat and Drought Elsewhere: 41.5% were not concerned, 30.8% had some concerns, and 27.7% were very concerned.
- Evacuation and Response during Events like Tornadoes, Wildfires, and Floods: 20% were not concerned, 43.8% had some concerns, and 36.2% were very concerned.
- Food Access and Security or Higher Prices due to Flooding, Heat, Drought, and Shipping Disruptions: 19.2% were not concerned, 26.9% had some concerns, and 53.8% were very concerned.
- Infrastructure Challenges due to Extreme Heat, such as Warping and Buckling of Roads and Pavements: 20% were not concerned, 37.7% had some concerns, and 42.3% were very concerned.
- Flooding Poses Risk to Urban Areas, Causing Disruptions in Navigation on City Roads, and Streets: 25.4% were not concerned, 38.5% had some concerns, and 36.2% were very concerned.

# Question 3: What aspects of climate change have you perceived differently compared to your childhood?

A total of 130 respondents provided the following insights (responses marked as 'none' were omitted for presentation quality):

Table 1. Responses to Q3 from Climate Community Survey.

Milder winters, longer summers with hotter days

My childhood was the era when people were telling us we were heading for another ice age because of some unusually cold and snowy winters in the 1970s.

None

A trend toward higher average temperature. There were periods of very high temperatures and violent storms during my childhood too.

We are getting closer and closer to the point of no return and running out of time to make changes that prevent climate catastrophes. It is also becoming clear that corporate greed has a huge impact and they have been trying to place the blame on individuals when corporations are the ones who can truly make a difference.

Since childhood it has become obvious that our dependency on cars has drastically increased climate change. There are so many negative side effects to the way we've built cities around cars.

more intense rain weather events, longer heat waves, more droughts, stronger winds

Warmer, dryer summers are impacting plants. There is too much emphasis on manicured lawns and not enough emphasis on native planting to replace turf grass. Native plants use less water and are more drought tolerant than turf grass. Native plants do not generally require watering, fertilizer, or heavy use of chemicals to control weeds. Native plants do not require weekly mowing with its large expense and carbon emissions. Landscape companies should be encouraged to plant native plants to replace turf grass and shift their business models to managing native plantings rather than mowing turf grass.

Too much debate among scientists. Not sure which set of data to believe.

The wildfire smoke impacts on the entire country. The risk for extreme thunderstorms and tornado activity. Extreme seasonal temperature changes.

Milder winters. More severe weather on a more regular basis

Over the centuries the climate has changed back and forth. Such changes are now being used by politicians for their political gain.

Definitely hotter and sunnier than in the past. Wildfire smoke from the western US and Canada is significant.

Extreme temperatures, high levels of drought, stress on plants and trees, too much pollution, toxic water/waste, most ponds, and grass have so many chemicals it's hurting vulnerable populations, higher levels of anxiety due to climate change in varying populations

Use of this issue in a divisive way

The smog

Climate is always changing-not concerned that it is any different than when I grew up.

not concerned during my childhood. Somewhat concerned now

I was a child in the 1960's. If there were wildfires, they were isolated - as far as I knew. Glaciers were not eroding. Islands were not disappearing. Weather was not as extreme as now. Australia was not burning. Canada was not burning. Antarctic glaciers were not shrinking at alarming rates. Animals were becoming endangered because people were killing them, not because their habitat was drastically changing. The frequency and severity of tornadoes in Indiana has not seemed to change. Winters are generally not as cold, summers not as hot. Smoke from wildfires didn't come to the midwest - because they didn't happen - and affect our air quality and health. I could go on.

Air quality and water quality concerns are greater

Less snowfall and milder winter

The change to winters, decreasing snowfall and higher summer temperatures with less gentle rain showers in Central IN. Decrease in firefly, butterfly, and bee populations

When I was a child, we were told the planet was cooling and climate would get colder. Now the opposite is what we are being told. Doomsday predictions for climate warming didn't come true. I think too much hype is being made of "Climate Change". The elite tell us what we need to do while they fly the globe in private jets and live in expansive mansions. Hypocrites.

Length of seasons

More extreme weather events than previously

less snow and hotter summers

Much more extreme summer heat and more bad storms like "derecho" last week.

Winters were longer

Did not hear as much about warmer temps and effect on the ocean and nature habitats

Everything seems more intense. Droughts linger, rains harder, winds mor violent, more flooding, more very hot days.

Climate change is discussed more than when I was a child. There's definitely a sense of urgency to do something. I also feel like weather where I grew up (Southern California) is a little more unpredictable than I remember it being.

Warmer winters and southern species moving northward, droughts, more tornadoes, less snow, ponds not freezing the whole winter,

N/a

Definitely much warmer days, of course when I was a child, we never had a.c.! I would never give that up, God willing!!

Less snow in winter; fewer opportunities for activities such as cross-country skiing.

Seasons are extremely unpredictable, and the cycles are longer (storm systems and rainfall that span a week+ instead of 3 days, extremely hot months instead of weeks, and drought periods that seem more random and severe.)

We have very little snow now. Also, we rarely have a true Spring or a true Fall with pleasant, moderate temperatures.

Lack of green space and more asphalt creating unpleasant, heated microclimates. This requires more AC

Fossil fuels

Hotter summers, milder winters, and less variety of insects, birds, wildlife. Less respect for our environment and taking care of the natural resources and wildlife which remain.

I hear more about it. It was not on anyone's radar.

Increased temperatures, more storms, less snowfall, changes in bird migrations

less snow fall

Never thought about it until Al Gore brought it up in 2000

It appears it is a real concern

The overall effects of climate change to nature and economic

Air quality (fires/heat and burning chemicals); effects on food production/prices

Understanding the effect of eating meat on the environment - have become a vegetarian.

Less snow in the winter, the hot late July/early August days are now all July and August, inconsistent precipitation patterns

I have heard that crop-growing climate zones may be shifting, but I have not seen it for fact.

Direct impact of increasing temperatures on food costs, availability, jobs, etc.

Climate change is getting worse at an accelerated pace

Spending time outside is getting more challenging for extended periods of time due to heat

Excess heat

Lack of snowpack from winter months to support surface water, reduction of the groundwater under the influence of surface water recharge

Air quality

Winters do not seem as cold and less snow fall.

Scientists in my university degree programs enlightened me to facts only: climate change is part of the organic "alive" system that is the universe. Humans did not cause it; humans cannot stop it. We will have highs and lows, another ice age, etc. Climate change is not political, not human-induced, it is natural and will happen no matter what we do.

More storms and they are more severe. Interruptions in travel due to storms. More physical damage to homes and environment due to storms. Stress in animals

More air pollution. More need for trees. Ecosystem complicated interactions.

I am a native Hoosier, born in Indiana. I honestly have seen no noticeable changes since my childhood.

Less snow

Hotter summers with more humidity and warmer winters.

The sun seems brighter, more intense. Summer much warmer as is winter. The four seasons less predictable. Wildfires impacting air quality over long distances. Less snow in winter& less rain in summer.

Hot weather appears earlier in the Spring

Hotter temperatures in Summer

The four seasons not so clearly defined

Storms seem more violent

Incursion of wildlife into urban areas; lowered water levels in bodies of water.

More extreme weather, much hotter summers, and milder winters. Also, climate change is having negative impact on other countries (floods or drought that reduce crops and increase food insecurity; hotter weather that causes human suffering) that will inevitably directly impact us/our country.

Recycling and finding ways to avoid producing waste.

It's not about the weather getting warmer, it's about the climate getting more extreme.

Recycling and learning to live without producing waste

Urgency of it

Hotter all year round, less snowfall, more extreme natural disasters

warmer

Warming planet, air pollution, too much plastic

Not sure I understand but a lot less birds, dry weather

Heat, the scorching sun sizzling your skin.

Hot, natural disasters

Awareness

We now are in a situation of mass extinction

I am not a native of Indiana, so I can't comment

The rains are more intense and spaced farther apart. I am noticing torrential downpours vs. lazy, drizzly rain that lasts a day or two. I have noticed more hot days throughout the summer instead of in August. We should only be seeing 90s and above in August.

On average, much higher temperatures

more intense hurricane seasons, hotter summers, warmer winters, additional tornado threats

Hotter summers, milder winters, drier summers, more severe extremes in Temps, precipitation.

It hardly snows as much in winter as it did when I was a kid. Summers have become significantly warmer. Recently, the air quality in Carmel sunk with wildfires from Canada creeping into the states. With air pollution on the rise and temperatures rising, I'm mostly concerned about its effects on the ecosystem.

Air quality - I never had to think about air quality and playing outside as a child (I am almost 50, a Gen-Xer).

We need to work with nature. We are only a part of it, not the master.

There are regular, weekly climate disasters around the world that are scientifically attributable to a warming planet.

The summers have been warmer and more humid than in past decades.

Higher heat and concerned about water supplies. We cannot survive without water.

Higher temps and shorter winter seasons. Water. We cannot survive without water.

Summer is warmer and drier and winter has much less snow cover.

very little

I think this climate change is a bunch crap...total lies.

Summers are hotter, drier. Winters are milder, less snow. More extreme heat year-round. More severe storms/tornados. More heavy downpours. Blue Spruces are dying. Flowering trees are stressed. More irrigation needed for lawns. Need to turn on AC earlier in the year.

The severe weather has increased significantly since my childhood as well as the heat of the summers. I have seen much more heat related illnesses as an aquatic's worker.

The main difference is the acknowledgement that it's not just "getting hotter," but that weather patterns are shifting and causing extreme weather events (polar vortex, tornadoes, flooding, etc.). Also, now it is considered not reversible, whereas 30 years ago it was still a "maybe."

The extremes of weather, rising use of plastic leading to pollution of water and harmful effects on marine life. I would like Carmel to be in the lead dealing with the climate change risks.

Fewer pollinators and lightning bugs.

I used to think it was how we would experience the heat locally. Now I understand that Climate Change is a global phenomenon that is projected to cause major disruptions to the livelihoods of people everywhere. Scientists now project there will be a Billion climate refugees (10 times what we now have and don't seem able to manage). This will cause wars, authoritarian governments to take hold, and likely global economic collapse. This will impact Hoosiers whether it's hot or rainy in Carmel.

through my 80 years in Indiana, I have seen varying degrees of temperature trends. I can remember that in the late 60s winters were warmer, but that changed. The extreme temperatures (The number of days with temperatures exceeding 95°F has significantly risen in recent years. We used to have an average of 13.7 days (1976-2005), but now it is 36.6 days. Projections indicate a potential increase to 51.8 days by the end of the 2060s.) as stated here is not put into context.

Vegetation changes, huge decrease in animal spiciest (I especially notice it in frogs and birds). The water quality of our lakes and streams including Lake Michigan. Oh, and the invasive species we have to deal with seems larger today.

Hotter summers. More natural disasters.

I think our seasons have shifted some. Warmer in the fall, cooler in the spring. No worries.

See much less direct sunlight all year round and especially in the morning.

Weather patterns

Higher max temps and higher low temps. Higher max temps' impact when I and especially workers can safely work outside. Rain bombs that lead to temporary flooding of creeks in Carmel.

The impact it has on native flora and fauna.

All aspects.

I am only 20 years old, but we have less snow in the winters, summers are considerably hotter, it's harder to enjoy time outside. Especially with such terrible air quality most recently.

Much more invasive flora. Heavier rains. Warmer winters.

Less clean water, much less wildlife butterflies, bees, wildflowers.... forests have been plowed down killing animals and their habitat, hotter summers, extreme fluctuations in weather rain, snow, heat, cold. More wildfires and drought. Water is more polluted; oceans are being destroyed-again marine habitat ruined.

Many aspects including experiencing milder winters, more extreme weather patterns such as severe storms, extreme drought, and warmer ocean temperatures. I also hear more about it today than during my childhood, as I never remember this being discussed in any of my social circles including school, home life, news cycles, or friendships.

Just more awareness, I was a child in the 60's, so didn't hear much about the climate

Flooding seems as bigger issue as natural wetlands have been filled.

Impact of human activity on climate and environmental changes.

My need for snowblower has diminished.

Areas of denser population that are affected quickly

Not much change

More noise about the weather and communications today that make us aware of all-weather events around the world

Severe weather impacts, people moving

More severe weather events in winter, spring, and summer.

None, I think it was hotter then.

I believe it is a made-up thing. There is not enough data to know there is a global warming or "climate issues." The only issues we seem too continually have are man-made.

Wildfires and flooding as well as heat waves and droughts. I don't recall hearing of those very often nor as severe.

I can tell it is much warmer and much less snow in the winter.

# Question 4: Are there climate impacts not listed above that you are particularly concerned about? Please share them here. (optional)

A total of 130 respondents provided the following insights (responses marked as 'none', 'N/A', or 'No' were omitted for presentation quality):

Table 2. Responses to Q4 from Climate Community Survey.

Harsher weather, impacts to food, water, and animals

No - climate change is real. However, Carmel does not appear to be exposed to risks in a material way that would justify some climate-specific adaptation strategy.

None

Use of resources to contemplate/worry about climate change. It's good for us to assess and determine what we can affect vs. spending resources on impacts that might not occur or that we can't change.

I think you got most of them

melting ice caps

Heavy development in Carmel has reduced our green spaces and disrupted the soil which, in turn, encourages invasive plant growth. Invasive plants such as Callery / Bradford Pear have not been allowed in development planting plans for years but have nonetheless been planted by builders because of their quick growth and showy flowers. Similarly, burning bush has been used as a landscape plant and is spreading into the few native areas left in Carmel. The loss of native areas has a direct negative impact on valuable insect species (>80% of hatchling birds are fed caterpillars that depend on native plants to feed and reproduce). This, in turn, reduces the numbers and biodiversity of native bird species. Allowing business interests to manage environmental impacts is counter to scientific evidence, is well behind the curve of forward-thinking communities in America and is a conflict of interest.

War on gas stoves, wood burning pizza ovens, solar panels, and windmills. Solar panels and windmill production is virtual all done in China. China also major control over the components for elective batteries. Then there is the issue of how to dispose of these products once their useful life is over.

Coal and fossil fuels still will be needed. But these may be eliminated as well by regulation.

School safety due to wildfire smoke.

infrastructure on need for electricity to have to power AC more often or backup generators due to power outages. City's ability to respond quickly to weather related issues.

The bogus expenses for climate change are causing the Nation to go into serious and dangerous debt. The National Debt is now over \$32 Trillion.

Air quality issues due to more wildfire smoke and droughts kicking up more airborne dust.

Toxic waste, invasive species taking over, not enough trees planted for carbon capture, not having people recycle, plastic bags and its impact on local wildlife (especially water wildlife), severe droughts, air quality, air quality, air quality. We need more grants for solar panels and better return rates on extra energy given back to the grid. Building security and building sustainability. Carmel is growing so much and there should be more restrictions in place to ensure quality building that can withstand climate change.

Impact of invasive plants and insects

The smog

I think you covered it pretty well.

The impact to the ecology overall

Nope. I'm relieved that global cooling didn't happen as I think that would be far more damaging to the planet than warming.

Air quality

Water toxicity

air quality issues

Yes, impacts on resources for those without much money or many resources. We had partial generator last week for 3.5 days of AES power outage and neighbors who did not have generators suffered more.

Economic impact - can we afford our insurance and upkeep due to weather related issues? Property taxes, insurance premiums, repairs, and updates necessary to prevent or withstand future damage.

Air quality

All of the above issues affect so many people & it seems, sadly, that the people that are the most affected already have issues with trying to survive economically. Very sad, scary world.

Impact on humans' ability to enjoy nature, garden, exercise outdoors, etc.

Water in Carmel is wasted over watering lawns. It doesn't really matter now, but in the near-ish future I can see a problem with water restrictions. The community won't tolerate it; we'll likely push for a pipeline from the Ohio to bring in more water rather than ration what we already have. I don't like that option for lots of reasons I won't expand on here, but in summary I think that would be ecology irresponsible and a bandaid solution. Xeriscaping would be a great trend to preemptively combat that! Especially in areas like roundabouts that currently just have a curated lawn aesthetic.

Impact on our food sources.

Effect on social life - especially for elderly - too warm to go outside, storm fears, etc.

Reluctance of legislators to confront climate change proactively.

Especially concerned about water. Going forward the lack of water and especially clean water, contaminated soil with its runoff of chemicals from farms & pesticides in our water.

Loss of wildlife habitat

Increase impacts on our parks. The weather has affected the vegetation in our parks and the increase population with more people visiting the parks are tearing them up more. Creating more erosion on the trails and adjacent to the trails.

Loss of land due to flooding

Mental Health impact. Scary to have air conditioner break in high temps or have a strain on power supply. Not being able to enjoy outdoor activities and be active during summer months.

Reducing waste - would love to see city-wide composting.

More trees - we need more trees on all public spaces. Rooftops as well.

Limits to watering yards.

Would love to see solar on public buildings.

Increase chance of pests due to longer growing seasons, higher spread of invasive plants due to different growing conditions, water security with increased demand from aquifers and fewer natural areas to help recharge those aquifers

Lack of shade from cutting down trees to build up more developments

I think more than anything extreme weather would be my largest concern. Like, more intense thunderstorms, wind, tornadoes, etc.

Prioritization of 'wealthy communities' not losing value versus poor communities being less able to adapt. I foresee Hamilton County making sure that the people that live near reservoirs or water bodies getting support because a drop in their home values will cause the tax base to come down, yet we will have portions of the community that will see increased morbidity and mortality due to heat related disease or exacerbation of pre-existing conditions. I see government officials making sure that we have water in the reservoir to allow recreational activities for homeowners before spending money on permanent heat relief shelters, storm shelter s

Air quality

My concern is that working taxpayers will suffer for nonexistent, man-made ideological and political purposes that use "climate change" as a fear tactic for gaining votes.

Less native and natural habitat for animals

Urban development often trumps ecological concerns. This city boasts about planting trees yet destroys a 300-year-old woods. Some tree cities we have.

None come to mind.

Warmer temperatures

I think you covered them.

Drought & air quality.

The cost of doing nothing/not enough to reduce the impacts of climate change will be very high. Future generations will bear the brunt.

Future for my kids

Worsened air quality due to loss of trees

Tornados and severe storms

Water quality killing ocean life

Global impact

Energy and renewables. Desperate need for government response.

A big concern for me is the potential for climate change to contribute to the mass extinctions of species. I think Carmel, Hamilton County and the US in general could plan development so much better, with regards to habitat destruction and using nature to help limit the effects of climate change.

Food security.

Yes. Overbuilding of apartments in Carmel with limited green space, removal of mature tree all affects our environment. Please STOP

Nothing that I can think of.

Air quality. Even now if you travel east on 96th, past Keystone, many days it's smoggy/dusty. This was true before the Canadian wildfires. My son has asthma. I'm concerned about his ability to do outside activities.

Slowness of US and v local governments to respond

I think it's an utterly logical conclusion that if nations don't move to slow climate change right now, we will see war in the next 50 years. Probably in other countries first, but then there will be competition for resources in the US as our own citizens migrate and search for water. I worry about my children's future daily- I'm glad to see that Carmel is starting to prepare.

Concerned about politicians and too many humans stating climate change is a hoax.

Too many politicians and humans think global warming is a hoax. It has become w political issue with majority of republicans believing there isn't global warming.

I am mostly concerned with drought, shifts in agricultural growing zones, and extreme weather events.

The impact of all these things on our quality of life and cost of living. Hotter days means more air conditioning. Climate Anxiety is hurting our kids. Sea Level Rise. Indiana governor and legislators are not doing anything about climate/clean energy, their policies are hurting climate/clean energy.

There are so many ways the climate affects are daily living and community that we can barely comprehend. I worry the most about how we will continue to sustain ourselves when other less affluent communities suffer. Air quality, food access, and overall life quality are all things I am immensely concerned about when it comes to the global climate.

Strain on the energy grid due to increased demand for air conditioning, usage of fossil fuels (coal, natural gas) to provide that energy making the problem even worse

There is a lot of food wastage leading to greenhouse emissions.

I recently attended a talk at the Public library and have signed up for Compost pick up through Earth Mama( Composting services)

Can Carmel introduce this option for all its citizens on a voluntary basis like other cities have done?

Germany is the leading country with its recycling efforts, I hope that we can learn and do better.

Thank you for offering a platform to express thoughts on this vital matter.

Smoke from wildfires making it difficult to breathe.

Mitigating the effects of climate change involves stopping the use of carbon fuels (ASAP), of course, as well as making our infrastructure resilient enough to withstand multiple climate catastrophes. If in fact these can be done. In addition, we must think about the people! Our children are already suffering climate anxiety and depression, and the future will bring many causes for people to have major cares and concerns over Climate Change. People will lose jobs, homes, friends, and family, etc. Carmel needs to be a whole lot more about caring for people - and not be so focused on money. IMHO

The number of mature trees that have been destroyed by apartment and other development in Carmel. Cutting down a tree with a diameter of 2 ft and planting one of 2 inches diameter will not really impact CO2 development.

Water quality - ash pits as well as the animals waste pits created by Caffos. Too much use of water to keep up the lawn - I'd like to see the encouragement more natural plantings in yard as well as clover.

Climate change affects globally. Air quality issues.

I'm most worried about what our government is trying to do to us. Talking about sun blocking and cloud seeding.

Trying to live with perpetual jet lag because we have way too much daylight in the evening and pay way more for air conditioning than for needed lighting in the morning.

Air pollution

There are several global aspects of climate change that might not impact Carmel directly, but are hugely important (e.g., sea level rise, stronger hurricanes, melting glaciers, global warming, increased drought and subsequent forest fires, reduction in crop yields).

Species (flora and fauna) extinction.

With climate change adversely affecting birds and wildlife, I would like consideration on removing lawns and instead planting as a prairie with wildflowers and grasses. There is so much new construction and, therefore, more lawns with the pollution that accompanies them.... exhaust from mowers, fertilizer, etc.

I am incredibly concerned about the disproportionate impacts of climate change that may not directly concern Carmel but can and will impact areas around Carmel.

Hopefully humans can put the brakes on over consumption, live on less, leave areas wild to support creatures for their clean water and food. Creatures can't shop at a store human can. Make safe crossings for animals to migrate. Animals need our help.

The political climate we are in today is preventing real climate change progress; thus, impacting not only how it is being perceived but how it should continue to be addressed. Unfortunately for all of us, this is affecting the entire scope of climate change - thus creating a real concern for causing worsening long-term conditions.

That people don't believe this is happening to our environment and won't until it's too late. I hear all the time when it's cold in the winter "oh this is global warming?" Yes! It is part of it. Education is key

Impact on nature and animals (besides humans).

Heat and air quality this summer have affected my ability to exercise outdoors. I worry that it will worsen beyond a few days to large parts of the summer being too hot

The fact that they move forward without having the science to back it up much like the electric vehicles without consideration to the electrical grid battery science is not there yet and still there is very small amount invested

Yes, I'm concerned about this overhyped on the weather affect having on young people

I am greatly concerned that those who have less economic resources will be disproportionately impacted by the effects of climate change.

I am not concerned about a climate issue. There are things we can do to conserve resources and not be wasteful, but there is no climate issue.

Climate and nuclear/bioterrorism shelters. With the Ukrainian war going on, I look and realize subways and old bunkers were used as shelter; however, here in Carmel there are no subways or underground emergency shelters nor a known plan with the City of Carmel, I just like to be prepared in case of emergencies especially protect any vulnerabilities. In addition, is there an emergency plan for catastrophic flooding? I was living in Carmel/ Fishers for the floods in 2000's. However, with extreme weather comes more dangers to be prepared for. So, I'm asking if there's a plan in place for any of these, try to

make known to us citizens so we won't panic because we have a plan, and a backup plan and a back up to the backup. Plans help mitigate anxiety. Thank you kindly.

### Socio-economic aspects in Carmel:

In the second part of the survey, we continue to inquire about the needs and concerns of specific populations within the Carmel Community. This section aims to gather more comprehensive data to address the diverse perspectives and challenges faced by different groups within our community. Some of the questions were optional.

### Question 5: What is your housing situation? Select one (optional)

A total of 128 people responded to this question. Among them, 86.7% indicated that they own their own home, 10.93% are renters, and 1.56% live with friends of family.

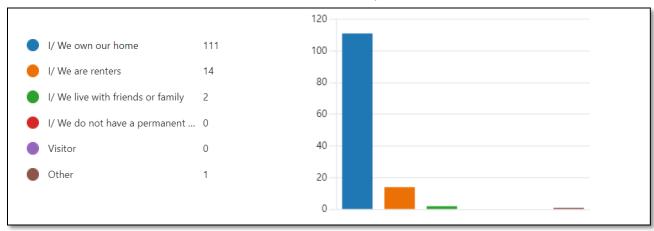


Figure 3. Summary Results from Q5 on Climate Community Survey

### Question 6: What is your household income level? (optional)

A total of 114 people responded to these questions, sharing their insights on the following aspects:

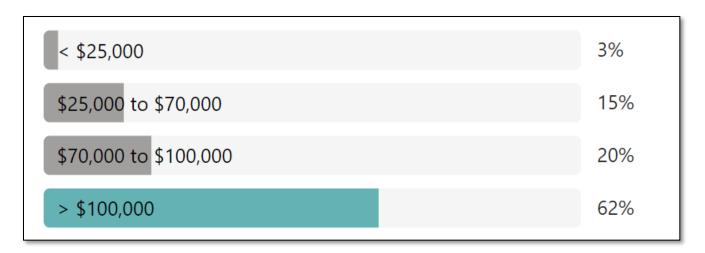


Figure 4. Summary Results from Q6 on Climate Community Survey

#### Question 7: How do you identify? Select all that apply (optional)

A total of 130 people responded to this question. Among them, 84.6% identified as white, followed by 6.9% as Hispanic or Latino, 6.15% as other (not specified), 3.07% as Asian, and 0.76% as American Indian or Alaska Native.

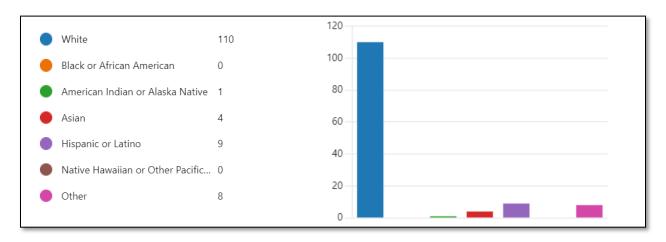


Figure 5. Summary Results from Q7 on Climate Community Survey

# Question 8: What is your favorite thing about our community? What do you love the most about living here?

A total of 120 respondents provided the following insights:

Lower crime, good schools, amenities such as trails and parks.

World class infrastructure and high-quality municipal services.

Safety

Schools and parks.

multi-use paths enabling car-light lifestyle

the urban forest & street trees, paths/trails, birds/animals, cleaner air, mixed land uses, and more

Convenient access to the entire city and inclusion of new dining options that are ethnically diverse

Lots of activities.

Bike lanes and pedestrian friendly! More of this please!! Less car traffic in the main core would be amazing!

bike paths, good roads, great police presence, therefore, lower crime. Good schools and community sports programs which set high expectations for our youth.

I am sorry I moved to Carmel in 2005.

Community has all resources, local events, weather, and sensitivity to environmental issues.

Ability to bike places, emphasis on parks and keeping native/natural woods, native plants, community feel

The general courtesy and consideration with which people treat public spaces

The community is kept clean i.e., streets and green spaces. I feel safe here, we have a good police department.

It is safe and affordable. Well maintained

Our neighborhood has not changed a lot since we've lived here, in the same house, over the last 30 years. We generally feel safe as we go about our lives in Carmel and the surrounding areas. There are many opportunities for activities for all age groups. The schools are excellent. The community is becoming more open to diversity. I was inspired by the recent

newsletter from One Zone and their focus on diversity and inclusion. I see a lot of philanthropy and benevolence, and that's inspiring.

Accessible green spaces where my family can give together

Walking and bike trails

The community feel and all the things to do as a family or with friends, the safety, and the lower cost of living

Safe from crime and violence

Parks and activities

walkability

intelligent governing folks, emphasis on green spaces, safety, kind neighbors

Parks-Library

Parks and whatever is left of greenspace

I love the family-friendliness, the cleanliness, the safety, and investment into the community.

The available trails to avoid using the car

Aquatics accessibility

All of it!!! There is so much to do for all age groups, safe (so far thank God), we are very blessed to live in such a unique, lovely place!!

The parks, trails, and education system.

It's safe.

Parks, Monon Trail, Roundabouts, low crime

Great public schools and an amazing Library, beautiful City Parks, our exceptional Police and Fire Departments, Gazebo concerts, the Palladium, Christkindlmarkt, and other entertainment venues, plus the Carmel Farmers Market. The city also offers great community events year-round (at no or little cost) that add value to living in this city. Something for everyone! Parks, trails

The parks!

What I once loved about our community is gone. The small-town feel has left a long time ago

The Park District

Forward thinking

Outdoor spaces and activities

The Pint Room!

Roundabouts --> very little time spent in traffic

schools and safety

family friendly, clean, safe, GREAT schools, walkability

This is a focus on making the community livable and enjoyable including protecting our people from the harsh effects of climate change.

The focus on alternate transportation methods such as walking and biking

Community parks, events, and social atmosphere

Safety and cleanliness

Parks, trails, outdoor entertainment, restaurants

Good school but concerned with direction they are headed with DEI currently. Get back to school academics. Safe low crime rate. Love our police and fire folks. Clean city. Concerned with too much concrete and not enough green being left when development of land.

Quality of life, excellent schools, parks, and library.

We love the excellent public services such as police, fire and rescue services, roads, and in the past, we used to be proud of our schools. We love Carmel because our tax dollars show in the aspects of the community such as flowers in the streets, activities and projects that bring our residents together, careful zoning and planning to keep out undesirable aspects, etc.

The people

Safety and school system.

Our support of green spaces, parks, and multi-use trails. BTW. I have concerns that our city center is continuing down the path of becoming a concrete jungle someday. It's a fact that urbanization contributes to hotter temperatures versus suburbs. High concentrations of multi-family housing do also.

Nice people

The activities planned for the citizens to enjoy.

Carmel is trying to meet future needs not just the present. Safety.

Great public services

Diversity

Low crime rate

I love that the city has leadership willing to act to provide a welcoming environment and the amenities that attract an active, well-educated population.

I love the safe neighborhoods, walking paths, schools, changing seasons, community.

Good infrastructure, paved multi-use paths.

My neighborhood is a walking neighborhood, adjacent to bike paths. We don't use cars as much as other places I have lived.

Lots of community activities and things to do

My neighborhood is a walking neighborhood, adjacent to biking trails Carmel has planned our city so using our cars is reduced.

The quality of living in Carmel is top-notch! The schools are exceptional, crime rates are low, and our parks system is awesome! I've found a particular love of the arts in Carmel! We have multiple state of the art performance venues, and we are lucky for that fact! I also do like the roundabouts and the infrastructure that has been implemented.

Trees

Minimal traffic

The variety and plethora of activities

Safety

I've lived here for 30+ years

Schools

Thoughtful urban planning

Safety. Walkways.

I do enjoy all the public amenities and the downtown area.

Walkability or bike ability to everything.

I like the downtown main street area but do not go there often because parking is so limited for senior citizens.

the safety

Cleanliness, great parks, and good bike trails, Monon Center, lots of eating options

I love how involved Carmel's community is. There are plenty of opportunities for engaging with people in the city, especially in the library. It's easy to find some kind of event that suits your interests, and a lot of places to hang out.

Bike ability, Monon community center, roundabouts, public schools, library, overall quality of life

The parks and rec departments approach to building things allowing for better water drainage, using native plants etc.

The fantastic schools

Central Park and Monon Greenway

Low crime rates, beautiful clean city, and our round-a-bouts. Forward thinking in terms of urban planning and the arts. Range of shopping amenities. Low taxes.

Low crime, low taxes, clean and beautiful city. Forward thinking in urban planning. Stricter zoning requirements. Our roundabouts.

Carmel is a friendly community with many amenities.

the roundabouts

The cleanliness of Carmel, and how beautiful and safe the area is

Our school district, the trees & parks, the bike paths, and the fact that solar is growing in Carmel. We have the means to do great things and be a role model for other communities.

I love all of the opportunities available in Carmel, and the parks!!

It's safe, clean, and has a lot of parks and walking paths.

It is a good community with excellent public schools, library, walkability.

The city has done well with the current Mayor's leadership.

It's large enough to have public amenities, but small enough to BE a community.

Our pond.

The liberal minority is growing.

The Monon Park and the Library.

My grandkids live here. The parks and schools are great, and I love the activities that the city coordinates with local businesses and volunteer groups.

Diversity of neighborhood and city - hoping they both become even more diverse with time.

Festivals, concerts, safety, our fire, and police departments, Monon center.

Vibrant and inclusive.

Outdoor space

bike paths

Parks, convenience, walkability, roundabouts, safe, high quality of life

All things Carmel!

I love the community we have built and the places we get to enjoy

Most of my family is living in this area.

Feeling safe.

The roundabouts and ease of accessibility, the friendliness of our community, all the businesses that are offered, the schools, and our library.

Green spaces, Monon

Strong schools, good community participation in activities.

Good place to raise a family.

The focus on transportation like roundabouts and connected paths

Lived here for 60 years

Not woke

It is safe

Safety, kept up, looks nice

The schools, the quiet, nature

It's safer than Indy.

I love many things about living in Carmel.

I moved to the area in 1994; officially becoming a resident in 1996. I love all the improvements. There's always new roads or improvement to roads. I love the Palladium area and the redo of the old lumberyard mall area. Overall, I love it! However, my one fault is the bikers on the main road like 146th street or even 141st or west roads —west Carmel in particular. It's hazardous for bikers to ride on streets with cars going 45+ mph. Especially with the roundabouts. It's hard to see bikers coming around the roundabout. Can we maybe have some education on the "rules if the road" for bikers. I was under the understanding that bikers must go the speed of the vehicles in order to be in a main road. For instance, if speed limit is 45 mph the biker needs to maintain a speed of 40-45mph. In addition, bikers obey all traffic signals including stop lights and signs. So, can we have an updated "bikers' rules of the road" education PR campaign? We all could use a refresher now that there are roundabouts. Thank you

Diversity. Cleanliness. Water fountains. Walkability.

# Question 9. Which community areas do you prefer to spend most of your time when you are not home or working.

A total of 122 respondents provided the following insights:

Meadowlark Parks, monon trails/ Hagan Burke trail and public library.

Downtown Carmel (Old Town through to City Center)

Parks, midtown, Monon Greenway

**Parks** 

Monon Greenway, Main Street, Midtown

Monon Trail, Central Park, Carmel Midtown, Carmel Old Town, and more

**Parks** 

Trails, main street, and midtown

Monon Greenway, library, and Midtown!

greenways and bike paths

On my property.

**Parks** 

Parks, Monon, monon center

West Park, Central Park, Monon and pathways in neighborhoods around us

Palladium is a favorite. Also, like Main Street retail.

Parks, HB trails. greyhound trail

Many parks. Monon Greenway except it's so crowded. The library. Low to mid-priced restaurants. My church (St. Peter's United Church of Christ on Carmel Drive east of Keystone.) Picking up carryout pizza from Bazbeaux, Greek Tony's, Jet's, Donato's, and others. Always on the lookout for places to walk where it's not crowded.

Parks and public library. Then Midtown and downtown

Monon

Parks, Monon, Main Street, Mid Town, walking paths, outdoor spaces

Parks and trails

Monon Trail

monon

Monon Center, Library, parks, home gardening

**Parks** 

Library

Parks and greenways

Monon Trail, Monon Community Center and parks, Carmel playgrounds.

Midtown, monon center, parks, Main Street

Parks and swimming

I walk down to Main Street, to Midtown, the Monon, etc. & try to attend as many activities as possible that I can.

Parks and such, contributing to education and experiences of young people, through school gardening, native plant projects, literacy efforts, etc.

Parks 100%, primarily ones with playgrounds and shade such as the natural play area at cool creek. We also like to bike down the white river greenway.

Hagan Burke trail, Monon Greenway trail

Single story, small homes, good neighbors, smallish yard allowing a small garden, near Central Park and the Monon Trail.

Monon Center, Monon Trail, Wednesday Gazebo concerts, midtown, downtown events

Parks, Library, Monon Greenway, Gazebo, Midtown, and downtown Main Street!!

Founders Park, river road trail, inlow park

Parks and monon Greenway, other trails

The parks were once my favorite get away. Fighting the crowds at the parks to get away to relax defeats the purpose.

Monon Center, Midtown, Dining, downtown

Parks, Monon

Monon, parks and Center for Performing Arts

Parks and main street

Parks, Main St, shops near my home (116/keystone)

Monon Greenway, Monon Community center, parks, Main Street/Midtown

main street shops and restaurants

Monon Greenway, Main Street, Midtown and walking through neighborhoods

Main Street, midtown, parks, monon

Monon, midtown, city center and Main Street

Monon greenway, Central Park

Main Street, Monon Greenway, Hamilton County Parks

Main Street, neighborhood, monon greenway

Main St, Carter Green

Main Street, Monon, parks, midtown.

West Park, Coxhall Gardens

We like to spend time biking on the Monon Trail and in the parks.

Parks!!

West Park, Coxhall Gardens,

We are a bike riding and walking family. So, parks and trails are a plus!

Main Street

Library, walking on the Monon trail, the Farmers Market, concerts at the Gazebo and other free concerts with live music, CarmelFest, Christkindlmarkt

Restaurants, Palladium, Saturday market.

ParksMonon

I love the Monon but take advantage of the city's network of multi-use paths to run and bike. I also love the park system and all it offers, from playgrounds to trails.

Midtown or trails

multi-use paths and trails, including Monon, West Park.

Walking paths

Main Street

Walking paths

Main street

Library, Monon Center

Library

Parks and pool

**Parks** 

Midtown

Midtown West Clay parks MononSchools

Gardening. Monon. Library.

I use the Monon for biking on regularly and I enjoy walking round the parks to view the wildlife.

Monon trail, Monon Center, and parks.

parks, monon

Monon Center, parks, midtown, and main street

Downtown Carmel, Midtown, trails along the White River

Library, Monon Community Center

**Parks** 

Monon community center and Waterpark, the Greenway, midtown plaza

Monon Greenway

Midtown, City Center, Monon Greenway

Monon Greenway, Main Street, Midtown, City Center.

Midtown, Main Street, Central Park Dog Park, The Monon Center.

monon greenway, parks, midtown, theatres, and restaurants

Monon, parks, bike paths

Parks and Midtown.

Parks, the library, Main Street

Farmers Market, Parks, Monon Trail, Chriskindlmart, Art Fairs, Local shops on Main Street.

Parks & Main St./Midtown.

Parks, restaurants, hardware stores, library.

Central Park, Monon Center and the Library.

Bike trails and parks, Midtown, the Monon Center.

Parks, Monon, Midtown

Monon center, Arts and Design, my neighborhood.

Unsure. Love living within walking distance of Carmel Green, Midtown, etc.

Monon greenway

Monon Greenway, Midtown

Parks and midtown

Walking on sidewalks, enjoying the wildlife around lakes and ponds, Palladium/Tarkington/Actor's Theater, Christkindlmrkt, Market District, College Park Church, Carmel Clay Library.

I spend time in our own backyard and downtown carmel. I also really enjoy river road park!

- 1) Working in my flower beds.
- 2) Removing invasive flora from public areas, as well as from Teter Organic Farm

Parks and library.

Main Street.

Trails, monon greenway,

West Park, monon greenway

Monon Center, various parks, church, food pantry

Multiuse paths, parks

None anymore it's way too congested

Parks and Monon

Main Street

Parks, monon community center, midtown, walking trails

Westpark, Monon, Holliday Park, Cool Creek,

I generally don't have time.

Main Street, various sidewalks for walks

I use West Park quite often. However, I do not like the redesign; grocery shopping is inconvenient and inaccessible for West Carmel area. I clocked a 5+mile drive to any grocery store in addition to 20-25 + minutes' drive to the high school, can there be a grocery store at 146/Towne or 146/ditch or even on 146/421. With all the redesign it seems us in West Carmel area spend most of our time in car driving around. I realize the community will never be completely walkable but a nice mini grocery store or a general store (not a specialty store) in West Clay (pettigru drive) area would be nice. So, to answer the topic question I spend most of my time in my car drive driving for basic necessities (now I use a lot of Amazon and Walmart.con but I would love to support a local nearby business instead)

Monon. Parks. Coffee shops.

#### **Community engagement:**

In the third part of the survey, we gather questions and feedback from community members and ask for their name and email to keep them informed about future Climate Resilience Planning engagement opportunities. This input will help shape effective strategies tailored to Carmel's specific needs.

### Question 10. Please share your question:

A total of 54 respondents provided the following insights:

What is Carmel doing to reduce emissions? When will we start composting as a city?

Carmel, along with every city, needs to make drastic improvements to walk and bike-ability in the city center, so that people can reduce their dependency on cars. Carmel has a great core with the Monon Trail, especially in Midtown, but it has a long way to go to making trips to work, school, and groceries safe and convenient. What is the city doing to accelerate building the multi-use path network? Especially towards the destinations I mentioned. We need safer crossings and more east/west connections. The speed at which car infrastructure gets built only serves to extend our dependency on cars and worsen climate change.

Do we even have a chance to turn this around, or are we too late?

I've been told that the reason Carmel does not implement stricter planting rules against invasive species is that it is too difficult to enforce. Why doesn't the city levy fine against developers who plant outside the approved plans and let individual residents report the violations? Can Carmel engage in a multi-year effort to encourage replacement of invasive plants with native alternatives by subsidizing some of the cost? Can developers be required to replace not the number of trees they remove, but the board feet they remove?

Not a question, just a comment. Seniors do not seem to be welcomed at the Monon Community Center.

Will the city be doing more to encourage alternative modes of transportation? Adding public transit and reducing car trips?

Why disregard the historical record regarding changes in the climate?

Seems like the focus is on trendy things like electric cars whereas good old-fashioned things like minimizing light pollution having porous driveways well and septic systems hanging out your laundry to dry, local garden are not given as much encouragement

What will you do with this information? Is this process connected to any political agenda?

I would like to see a greater emphasis on affordable housing (so people who work in Carmel can live in Carmel, reducing commuting and associated pollution. Similarly, I would like increased access to public transportation.

Why so many apartments? We are not the city of roundabouts; we are the city of apartments.

Are we looking to do more for the ecology of our area? I have seen some things Westfield I has been doing but not in Carmel.

How can we contribute?

Is Carmel ready to limit stupid irrigation of stupid green lawns now that water is an issue?

What is Carmel doing yo help prevent the city from becoming a solid concrete jungle?

I do believe there is way too much building in Carmel of hundreds (or more) of condo/business places--Carmel is losing its charm & hopefully the infrastructure can handle all of it.

How is Carmel as a city planning to address climate change when it is a global issue?

Why has the city not dedicated space to a park in the center instead of so many apartments and condos with no green space at all. Will this change?

I am concerned about the recent overbuilding of apartments in our city. Heavy traffic has become an issue lately plus overuse of all areas of the city will be impacted moving forward. We need considerably more Green Space!!

What are we doing to increase use of solar, wind, and batteries for energy storage.

What are we doing to address climate change here?

Carmel water has always been plentiful, so any impact to that would be concerning.

What can be done to improve the quality of life for low-income workers trying to live in our community

How is funding allocated to combat climate change?

What I shared earlier about concrete urbanization, and Carmel's ongoing support of construction of already excessive multi-family housing.

Hope that the city leaders will continue to request citizen input on things that impact the city. For an example, I am concerned about the rapid construction of residential housing and at the cost of giving up green space

Concern over growth. Increase in large apartment complexes & therefore, increase in population.

I encourage Carmel to reduce our carbon footprint as quickly as possible. And reduce the city's waste of resources.

How is the city going to preserve the already scarce wetlands and nature preserves that Carmel has left? / How does the city plan to address the shortage of affordable housing in Carmel?

How do you anticipate handling the density of people as more apt complexes are being built

An awful lot of 5/1's is interfering with the aesthetics of the community along major thoroughfares like Rangeline, Monon Trail, and Main Street. Highly disappointing that in the planning there wasn't more allocation of green space along the edges of those thoroughfares.

What steps is Carmel taking to prevent the negative effects of climate change?

How can we encourage better air quality and air quality awareness, even when we're not getting smoke from Canada? How do we encourage a culture of xeriscaping/carbon sinking vs. "pristine" front lawns/landscaping which releases lots of carbon into the air?

What is Carmel doing to prohibit idling and require recycling and green building.

Please stop the over development of green space in Carmel. I worked in New York City for many years. Carmel will soon have more rental apartments than NYC,

Carmel's Climate Action Plan is a great start. What is the plan for engaging our schools, parks, businesses, and neighborhoods to develop their own carbon reduction plan? How can we share our progress with other communities? What do we as a community see as our role in the overall climate crisis and how will we address that locally?

Do you compost all the flower arrangements which are arranged on the streets after they are replaced with new ones? They are very pretty to look at, but I think every issue needs to be looked through the eye of preventing further damage to the environment in the name of aesthetics.

The current Carmel Climate Action Plan says the city hopes to reduce CO2 equivalent emissions by 45% by 2035 and that we will not be carbon neutral (net zero carbon) by 2050. These goals are not good enough. The increasing pace of Climate Change effects requires that we get all the way to zero much faster than this. Carmel needs to look at things like making Duke get to Net Zero Carbon quickly or cutting our ties with the utility and buying only electricity generated by renewables from someone else. IMHO, we need a mayor who will take on the Indiana Legislature on this.

How can you justify destroying all the mature trees, which are one of the main natural ways of controlling climate change?

What specifically is Carmel doing to make regional and National impact on climate change?

Recommend more tunnels (or pedestrian bridges) so that bikers and pedestrians don't have to cross busy streets.

What can Carmel improve upon to build a climate resilient community? How can we further reduce our greenhouse gas footprint?

Could you hold an educational session or sessions on 1) what is currently being done, 2) what are the challenges, 3) how those challenges are prioritized to be tackled, 4) and what are our opportunities to help? Are there any committees looking for volunteers to serve? I am interested in helping.

What is the City of Carmel doing to encourage the use of vehicles - both commercial and private -- that use "alternative fuels", particularly electricity.

How can we slow construction and give wildlife a place to live? More green space with all the building going closer and closer to streets it's claustrophobic to drive. Unsafe to ride bike or walk in some places. The trees help clean the air and we need to save the mature trees we have.

None, thank you.

How can we make people understand global warming is real?

I'd like to see more solar, either individuals or community solar. What is Carmel doing to address alternative energy sources for individuals? I'd also like to see a transit option, such as buses. Does Carmel have a plan for

It would seem that moving forward is going in the same direction as when we had the environmental emergency with paper bags, and we replace them with plastic which is 1000 times worse. Why did we not get the answers from science before moving headlong and hoping we're doing something that helps.

Taxes for all the development projects

Concern the number of small homes, decreased parking availability

Do we have adequate shelters in cases of extreme heat, cold, etc.?

Are you trying to become a 15-minute city?