Large-Scale Development Trends in Central Ohio and and Their Environmental Implications

December 2024

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Information and recommendations were developed to assist the OEC in serving the Central Ohio region and achieving its mission of securing healthy air, land, and water for all who call Ohio home. The OEC recognizes that development decisions made today can help, or hinder, the region's ability to achieve a sustainable and just future where diverse people, innovation, and natural treasures thrive. This report will aid in guiding OEC's strategic initiatives in Central Ohio.

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Introduction

Once a primarily industrial heartland, Central Ohio has undergone a remarkable transformation. Driven by a confluence of factors, the region has emerged as a dynamic economic hub and a desirable place to live.

The region's diverse economy has proved resilient, weathering economic storms with relative ease. Manufacturing giants have long called Central Ohio home, but in recent years, the technology sector has experienced explosive growth. Companies like Honda, Intel, and Amazon have chosen to invest heavily in the region, attracted by its skilled workforce and supportive business environment.

A cornerstone of Central Ohio's success has been its commitment to education. Ohio State University, one of the nation's largest public universities, has played a pivotal role in producing a steady stream of talented graduates. The region's network of technical and vocational schools further enhances its workforce capabilities.

Central Ohio has also benefited from a relatively low cost of living, compared to other major cities. Affordable housing, lower taxes, and a strong sense of community have made it an attractive destination for both residents and businesses.

These factors, combined with strategic planning and investment, have created a fertile ground for economic growth and development. At the same time, however, the lack of prioritizing the environment in these plans has driven concern from local governments and the communities they represent. The region's burgeoning population, expanding infrastructure, and increased economic activity are forecast to place a strain on natural resources and the capacity of the region to sustain its activities into the future.

One of the most pressing environmental challenges facing a growing Central Ohio is the ability to mitigate its contribution to climate change and air pollution. Whereas manufacturing and technology businesses provide good paying, career-track, essential positions, they are highly energy-intensive industries. Without a plan to power operations with emission-free energy, further environmental damage will continue, development will become more difficult to sustain, and the region will become less competitive with those which have had a forward focus.

As the region's economic activity and population grows, so does the demand for clean water. Manufacturing and technology businesses are both water-intensive industries. Protecting local waterways from pollution and ensuring adequate freshwater supplies for future generations are consistently noted as critical tasks. Consistently, protecting local waterways from pollution and ensuring adequate supplies for future generations are noted as critical tasks.

Another significant environmental issue is the preservation of green spaces and wildlife habitats. The region's development boom is primarily replacing farmland; land which previously served as buffers to pollution and connecting corridors for wildlife. Efforts to conserve and restore these areas are essential to maintaining biodiversity and ecosystem health. As well, preservation and expansion of the tree canopy are viewed as a necessary component of the region’s climate strategy.

The region is at a critical juncture. By embracing proactive planning, collaboration, and a commitment to sustainable and equitable development, Central Ohio can navigate the challenges of rapid growth and create a thriving future for all its residents. Amid these opportunities and issues are local governments and community organizations looking to be involved in the process. There is a strong recognition that decisions about the future are made now, in the present. As the number of large-scale developments is expected to grow, stakeholders are seeking guidance and capacity to engage in a meaningful way with developers and the State in order to provide for the well-being of their communities.

The following highlights the current developments and trends in Central Ohio and summarizes the environmental implications and concerns. Using Intel as a primary case study, recommended actions based on stakeholder engagement are suggested as a way for communities to get in front of future development issues.

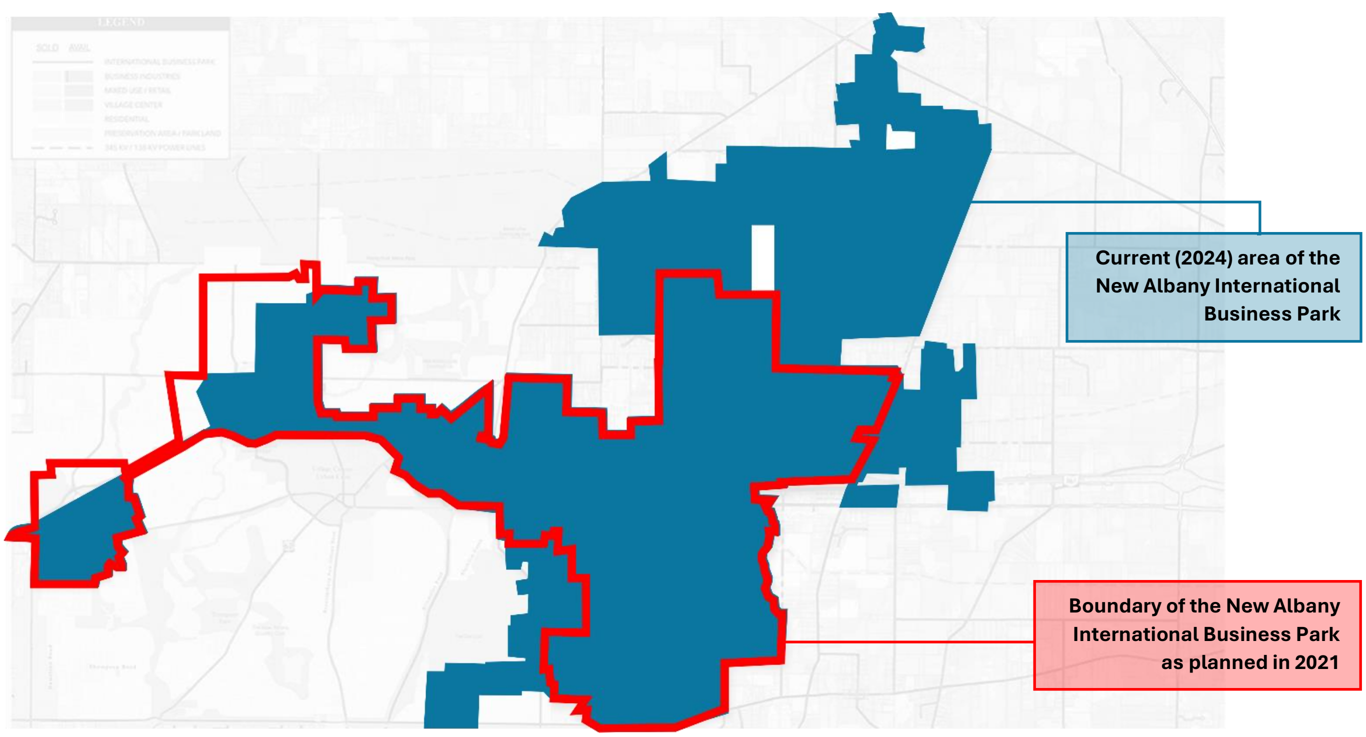
Large-Scale Development Trends in Central Ohio

The Intel Computer Chip Manufacturing Facility Project, a $20 billion investment in Central Ohio, has ignited a wave of excitement and development in the region. Since its announcement, the project has attracted significant attention from other tech giants and large-scale organizations, leading to a surge in investment and expected job creation. With New Albany and its environs emerging as a "New Silicon Heartland," it is essential to examine the potential impacts that large-scale developments may have on the local community and environment.

The current growth in the region is being realized through a variety of factors, including:

- **Tech Industry Growth:** The region has become a hub for tech companies, particularly in the areas of artificial intelligence, cybersecurity, and fintech. This growth has attracted significant investment and talent, fueling demand for office space, housing, and other amenities.
- **Infrastructure Investments:** Major infrastructure projects, such as the expansion of highways and public transportation systems, are underway to accommodate the growing population and economic activity. These projects are also creating opportunities for development along transportation corridors.
- **Urban Redevelopment:** Many cities within Central Ohio are undergoing revitalization efforts, with a focus on redeveloping historic buildings, creating mixed-use developments, and improving public spaces. These projects are helping to attract new residents and businesses to urban areas.
- **Data Center Boom:** The region has emerged as a major hub for data centers, with several large-scale projects underway. This growth is driven by factors such as abundant and affordable energy, a favorable regulatory environment, and access to fiber-optic infrastructure.

Although significant growth is happening to the south[1] (as far as Lancaster) and west of Columbus[2] (primarily Hilliard), the New Albany area to the northeast is experiencing the lion's share of technological development, with billions of dollars being invested in the region. The map below is based on the New Albany Company's Master Plan, overlaying the original planned boundary of the New Albany Business Park in 2021 (red) and the current planned area in 2024 (blue).[3] In just three years, the expected size of the business park has grown nearly 60% and now includes land reserved for new residential as well as mixed-use developments abutting industrial operations.



Since Intel's announced investment:

- Amazon is currently building over 30 new data centers across the region, likely surpassing 5 million square feet in building footprint.[4]
- Google has committed $1.7 billion to build three new campuses for its data centers.[5]
- Microsoft has acquired nearly 700 acres of land to develop multiple data center campuses by 2028.[6]
- QTS has pledged $1.5 billion for nearly 5 million square feet of data center construction.[7]
- DBT Data is building over 1 million square feet of data centers.[8]
- Edged Energy is building a 210,000 square foot data center on 15 acres, to be completed by 2025.[9]
- Lincoln Rackhouse is aiming to build over 1.5 million square feet of new data centers by 2025, with a potential critical load of 144 MW.[10]
- CyrusOne is planning a $150 million data center with details to be announced.[11]
- Vantage Data Centers will invest $185 million in new data centers with details forthcoming.[12]

Beyond data centers, the region is continuing to see multiple large-scale developments:

- A new industrial complex, West70 Logistics Center, is being built in far west Columbus near Hilliard. This complex could eventually include five buildings totaling nearly 1.8 million square feet.[13]
- Pataskala is now home to one of the largest, most-advanced solar manufacturing facilities in the nation. At 1.1 million square feet, the Illuminate USA facility employs 1,000 people.[14]
- As a supplier to Intel, DSV has started construction of a 1.2 million square foot logistics facility in New Albany.[15]
- The John Glenn Columbus International Airport is undergoing a $2 billion renovation in order to be able to serve more travelers and larger airplanes.[16]
- Although announced prior to Intel, Amgen has opened a 300,000 square foot advanced biomanufacturing facility in the New Albany Business Park and employs 400 people.[17]

The FRAMEWORK Response

The Intel announcement, coupled with existing growth trends in Central Ohio, created both excitement and uncertainty in Licking County. Local leaders recognized the need to prepare for this growth proactively and ensure that it benefited the community. The FRAMEWORK[18] initiative was launched in 2022 with the goal of producing a collaborative vision for Licking County that would address economic development, land use, character of place, and more.

FRAMEWORK brought together 15 local governments, including the county government, four cities, three villages, and seven townships, to collaborate on a shared approach to development. This collaboration was seen as essential to ensure continuity between jurisdictions and avoid the negative impacts of uncoordinated growth.

The initiative aimed to shift from a reactive to a proactive approach to growth and development; to manage growth strategically and ensure that the area remained a desirable place to live, work, and raise a family for years to come. The goal was to have a plan in place that would guide decision-making and shape the future of the county in a way that reflected community values and priorities. By bringing together diverse stakeholders and leveraging community input, the initiative aimed to create a shared vision for the future that would balance growth with the preservation of the county's unique character and assets.

Having concluded in 2024, FRAMEWORK developed a collective vision[19] for how the 15 participating communities will respond to the Intel project through further implementation and development strategies. Suggested actions for local governments fell within the topics of Administrative, Sustainability, Planning, Development Regulations, Conservation, Infrastructure and Transportation, Economic Development, Housing, Collaboration, and Education. Whereas the initiative did not focus specifically on the environmental impacts of development, concerns were raised to such a degree by stakeholders that sustainability and environmentally focused actions were made in the final recommendations. These recommendations[20] include:

- **Open Space Conservation Plan**: Develop a county-wide Open Space Conservation Plan to protect natural resources, water quality, farmland, and identify opportunities for land conservation. This would involve coordination with the Licking Park District, Licking County Soil and Water Conservation District, Licking Land Trust, and Granville Open Space.
- **Protecting Natural Resources:** Promote strategies, programs, and funding mechanisms to protect valuable open spaces, floodplains, natural features, and prime agricultural soils.
- **Improving Quality of Life:** Enhance quality of life for all residents by creating sustainable and equitable communities. This involves improving transportation and mobility options, prioritizing capital improvements for multi-modal transportation, and increasing access to parks and trails.
- **Promoting Sustainable Growth:** Encourage robust, inclusive, and sustainable growth and development patterns that maximize infill and redevelopment, prioritize locations with existing infrastructure, and increase affordable/workforce housing near employment centers.
- **Protecting Resources:** Work with the Licking Park District to identify, acquire, and conserve valuable natural resources and open spaces, including stream corridors, floodplains, woodlands, wetlands, and species habitats.
- **Model Agricultural Protection Techniques:** Develop model agricultural protection techniques and regulations to reduce impacts on working farms.
- **Model Environmental Protection Techniques:** Develop model environmental protection techniques and requirements that local jurisdictions can adopt to protect floodplains, woodlands, and wetlands.
- **Land Dedication Requirements:** Consider implementing land dedication requirements for public parks, schools, and other facilities when supported by local plans.
- **Strengthened Floodplain Regulations:** Evaluate the adequacy of county floodplain regulations and consider strengthening them to protect property and public safety in response to climate change.
- **Support Land Trusts:** Continue to support local non-profit land trusts in acquiring land for conservation.

Environmental and Social Concerns of Large-Scale Development

Large-scale developments, while contributing to economic growth and progress, often have significant environmental implications. These projects, ranging from infrastructure developments to industrial complexes, can lead to a cascade of environmental issues that require careful consideration.

Analysis Methodology

Whenever possible, data presented below were taken from public-facing documents. Priority was placed on official filings, specifically those filed with the Ohio EPA, the Public Utilities Commission, local governments, and similar organizations. Secondary data sources include documents produced by FRAMEWORK Licking County, trade organization publications, news articles, and public information released by other sources such as Intel and the New Albany Company.

As environmental data regarding large-scale development (beyond what is required by Ohio EPA) are difficult to source, an analysis was undertaken to forecast the potential environmental implications of Central Ohio's growth. To achieve a defensible projection of the region's future, the report authors modeled existing Intel facilities based on data available at ExploreIntel.com,[21] publicly available information about the Ohio facility, and other regional data available to the authors.[22]

To provide contextual information, interviews were conducted with multiple stakeholders across the region and across sectors. An emphasis was placed on insight from both the public and private sectors working in a range of fields from development and planning to transportation, education, and the environment. These conversations provided insight into their planned activities, capacity, concerns, and synergies with other organizations.

Environmental Impact

Natural and Working Lands Destruction

Large-scale developments in Central Ohio will likely lead to the destruction of forests, wetlands, and agricultural land. These lands not only provide ecosystem services such as natural habitats and travel corridors for animals, but also serve as a basis for cultural identity in Central Ohio. Between 2020 and 2023 in Licking County, land used for high intensity development has increased 19%, while cropland and woody wetlands have decreased by 4% and 1%, respectively, over the same period according to data provided by the Multi-Resolution Land Characteristics Consortium.[23]

The construction of the Intel facility has resulted in the loss of 9.98 acres of wetlands, necessitating statutorily required mitigation efforts for 20.83 acres of wetlands through Ohio EPA's Level Three Isolated Wetland Permit.[24] Wetland mitigation involves creating or restoring wetlands in other locations to compensate for wetland losses. However, mitigation may not fully replace the ecological functions of the original wetlands.

In Licking County alone, 55% of the land is dedicated to agriculture, making it a defining feature of the area's landscape and economy.[25] The projected residential development over the next ten years, driven in part by industrial investment and other growth pressures, is anticipated to consume approximately 21,754 acres of land, a significant portion of which is currently agricultural land.

Water Pollution

The influx of new developments will inevitably increase impervious surfaces, leading to more stormwater runoff. This runoff can carry pollutants, such as fertilizers, pesticides, oil, and heavy metals from roads, parking lots, and lawns, ultimately degrading the quality of surface waters.

Concerns have been raised about the potential environmental impacts of industries supporting Intel's construction, such as asphalt and concrete plants along Raccoon Creek.[26] Local governments are worried about their ability to successfully regulate these industries or mitigate water pollution caused by runoff from their operations or accidental spills. See “Material Consumption” below for more information about this specific example.

Stakeholders indicate that the increased population and development will put a strain on existing wastewater treatment infrastructure.[27] If this infrastructure is not adequately expanded and upgraded, it could lead to the release of inadequately treated wastewater into the environment, posing risks to water quality and public health. The construction of a new wastewater treatment plant in St. Albans Township to serve parts of Jersey Township is a direct response to the anticipated demand in Licking County.[28]

Air Pollution

The anticipated surge in development within Central Ohio is poised to exacerbate air pollution across three primary sectors:

- **Construction Activities**: Demolition and the operation of heavy machinery inherent to construction projects release pollutants, dust, and particulate matter into the atmosphere. These emissions can significantly degrade air quality and contribute to respiratory ailments.
- **Transportation Activities**: As the region's population and economic activity expand, so too will transportation-related emissions. The latest population projections from MORPC indicate substantial growth in Franklin, Licking, and Delaware counties, between 26% and 80% through 2050, further intensifying traffic congestion and associated air pollution.[29]
- **Operational Activities**: The manufacturing sector, in particular, relies on chemical processes that release toxic pollutants into the environment. While regulated by the Ohio EPA, these emissions can still pose significant health risks to local communities, especially in areas with high concentrations of industrial facilities.

As an example of the expected air quality impacts, in the Permit to Install granted to Intel by the Ohio EPA, the maximum Potential to Emit for some criteria pollutants exceeds the minimum thresholds for being considered a major facility (Title V), and thus requires a Best Achievable Control Technology evaluation. The Ohio EPA determined that Intel would need to implement control technologies, which may include highly efficient equipment or maintenance protocols. As part of the Title V permit, Intel is also required to include record keeping, agency inspections, emissions testing, and reporting to ensure proper performance of its air emissions control technologies and emissions.[30]

A growing concern for data centers is the reliance on fossil fuel generators to ensure an uninterrupted supply of electricity. Although some use natural gas, many data centers rely on diesel generators for backup power. When these generators run, they emit pollutants like nitrogen oxide (NO_x) and particulate matter (PM), which can contribute to smog and respiratory problems.

Resource Consumption

Energy Consumption

The rapid expansion of large-scale facilities poses a significant threat to regional and global climate goals. These facilities are energy-intensive, requiring substantial electricity and natural gas. The Intel facility alone is projected[31] to consume around 841 gigawatt hours of electricity annually, roughly 0.6% of all electricity sales in Ohio for 2023.[32] Producing this electricity will generate 442,596 metric tons of carbon dioxide-equivalents (CO_2e).[33] Furthermore, onsite fossil fuel consumption could add nearly 1.7 million metric tons of CO_2e annually, as approved by the Ohio EPA in Intel’s Permit to Install.[34]

It is projected that once the facility is operational, greenhouse gas emissions from the industrial sector in Licking County could double, with Intel alone accounting for 39% of Licking County's total greenhouse gas emissions across all sectors. If all eight proposed chip fabrication plants are realized, Intel's Ohio operations have been projected to potentially emit nearly 5 million metric tons of CO_2e annually. In comparison, Licking County produced 4 million metric

Table 1 | Environmental Concerns with Developments in the Technology Sector

	Semiconductor Manufacturing	Data Centers
Energy Consumption	Semiconductor fabrication facilities are energy-intensive, requiring significant amounts of electricity to power complex manufacturing processes.	Data centers are notorious for their high energy consumption, as they require constant power to operate servers and cooling systems.
Water Usage	The production process involves various water-intensive steps, such as cleaning and cooling equipment.	Data centers use large amounts of water for cooling purposes, particularly in regions with hot climates.
Chemical Waste	Semiconductor manufacturing generates hazardous chemical waste that needs careful disposal and treatment to prevent environmental contamination.	
Heat Generation	Fossil fuels are used to create heat transfer fluids as part of the manufacturing process, leading to the release of significantly harmful greenhouse gases.	The intensive computing operations within data centers generate substantial heat, which needs to be dissipated effectively to prevent equipment failure.
E-Waste	The advanced technologies used in the manufacturing process may contribute to increased e-waste at the end of their lifecycle.	The rapid turnover of IT equipment in data centers contributes to electronic waste, which can contain hazardous materials.
Air Pollution	Certain manufacturing processes release air pollutants, including greenhouse gases and volatile organic compounds (VOCs).	Electricity demand in data centers is significant, leading to increased pollution in areas with fossil fuel-powered electric generators.
Land Use	Large-scale semiconductor manufacturing plants require significant land area, potentially impacting natural habitats and ecosystems. Developments at this scale will have local and regional implications for the nature of communities and well-being.	Large-scale data center operations require significant land area, potentially impacting natural habitats and ecosystems. Developments at this scale will have local and regional implications for the nature of communities and well-being.

tons of CO_2e in 2022, while the entire City of Columbus emits around 11 million metric tons of CO_2e annually on average.[35]

The influx of new residents and increased commercial and transportation activity associated with these facilities will further exacerbate the region's carbon footprint. Estimates suggest that additional residential, commercial, and transportation energy consumption as a result of Intel locating in Central Ohio could contribute an additional 111,793 metric tons of CO_2e annually.[36]

Some companies may use renewable energy credit (RECS) purchases to address their carbon footprint. While RECs support the development of renewable energy projects, projects are not guaranteed to be located near the point of consumption, leaving pollution to be experienced within the region where the electricity is produced.[37]

Whereas Intel is expected to use RECS to offset 100% of their electricity consumption, some new large-scale developments have pursued the development of Ohio-based solar facilities to supply their electricity needs employing power purchase agreements. Amazon is a dedicated off-taker from multiple new solar facilities in Ohio, including Fox Squirrel in Madison County, Yellowbud in Ross and Pickaway Counties, as well as approved but yet to be operational facilities in Crawford and Champaign Counties.[38]

The projected increase in emissions from large-scale developments could seriously impede the region's ability to achieve its carbon neutrality goals. In addition to the fossil fuels that will be consumed, AEP Ohio has signed agreements to provide an additional 5,000 megawatts (MW) of electricity transmission capacity within the region by 2028.[39] Customers seeking agreements in the region, however, have requested over 30,000 MW of transmission capacity.[40] Whereas this will not increase emissions at the point of consumption, the added electricity demand will increase emissions from generators across the PJM electricity market, in which Ohio is located.

Water Consumption

Chip fabrication facilities and data centers are both water-intensive operations that can significantly strain local water resources. These facilities typically consume millions of gallons of water daily, with some, like the proposed Intel facility in Ohio, requiring as much as 6 million gallons in daily capacity (more than double the amount of water used by the entire City of Gahanna in a day).[41] Microsoft's six data centers in Hebron will also draw significant water at peak times as well, requesting "252 gallons per minute per building, plus a reserve of 210,000 gallons per day for discharging, treating and transporting at peak wastewater flow."[42] This substantial water demand can place a considerable burden on existing infrastructure and potentially compromise local water supplies..

The influx of new residents associated with such large-scale developments further exacerbates the issue. As the population grows, so does the demand for water. This increased consumption, coupled with the water needs of chip fabrication plants, can push existing water supplies and infrastructure to its limits, potentially leading to water shortages and quality issues.

Ground water will be used in limited quantities during Intel's construction including for activities such as dust suppression and concrete production.[43] In the case of New Albany, Ohio, the exploration of new well drilling near Granville has raised concerns among residents about potential impacts on the local aquifer and the risk of water contamination from a nearby Superfund site.[44][45] This scenario underscores the potential for conflict and environmental damage when large-scale development projects compete for scarce water resources.

Another pressing challenge to development is the unpredictable availability of water and sewer services within Licking County, and likely other counties as well.[46] This may derail well-planned local development strategies and hinder rational development patterns. A regional approach, while ideal, seems unlikely at this time. Several local jurisdictions are collaborating to coordinate planning and utility services, but the absence of regional cooperation could limit potential economic benefits. Ohio EPA's expedited approval of package plants[47] is a short-term solution that may address immediate housing needs but neglects the need for a comprehensive, long-term strategy.

Despite real and perceived challenges accompanying large-scale development water consumption, Intel provides an example of ways to potentially mitigate issues. To meet the potential water demand of 6 million gallons per day (MGD), the City of New Albany will supply water from the Hoover Reservoir. However, once the on-site water treatment and reclamation system becomes operational, the city water demand will significantly decrease to approximately 3.3 MGD.[48]

A key aspect of Intel's long-term water strategy is to achieve net positive water by 2030. This ambitious goal involves:

- **On-site Water Recycling:** Utilizing state-of-the-art technology to reuse water through a water treatment and reclamation facility, reducing overall freshwater consumption.
- **Water Conservation:** Implementing water-efficient designs and practices to minimize water usage across operations.
- **Water Return:** Treating and returning approximately 80% of the used water back to the municipality.
- **Watershed Restoration:** Investing in projects to restore, protect, conserve, or return water to the local watershed, offsetting the remaining water consumption.

Intel has already initiated its first watershed restoration project in the region. By achieving net positive water, Intel aims to ensure that its operations have a minimal impact on the local water resources and contribute to a healthier environment.[49]

Material Consumption

Local representatives believe the exceptional increase in development has fueled a significant demand for construction materials. An example of the local impact was the proposal of multiple concrete and asphalt plants in the Village of Alexandria. Facilities such as these consume significant amounts of energy and are known to release volatile organic compounds, polycyclic aromatic hydrocarbons, and particulate matter.

As well, these particular facilities brought additional pushback from the community as they would be located in a floodplain adjacent to Raccoon Creek, which helps recharge the Granville water-well field that supplies drinking water to Granville and Alexandria residents.[50] Despite an air permit approval from the Ohio EPA, the Licking County Planning Commission denied the permit for development, effectively canceling the projects after significant public outcry and serving as an example of the importance of community engagement in development processes.[51]

These issues are not likely to end here. Cement suppliers continue to be significantly constrained, as has been the case for years now across the US, due to a lack of investment in additional capacity to create it.[52] As cement is a component of concrete, and therefore necessary for foundation construction and roads, there is a high likelihood that new cement production facilities will be co-located with new large-scale developments.

Social and Economic Impacts

Mobility

A significant increase in traffic due to the current developments and the associated population and employment growth is manifesting, and many Central Ohioans are already getting first-hand experience in how these new developments can lead to traffic congestion, air pollution, and increased travel time. A similar phenomenon of increased traffic congestion was observed in peer cities like Austin and Phoenix, which saw rapid growth in their tech sectors at the expense of agricultural land.[53] This highlights the need for proactive planning and investment to mitigate congestion.

The expected surge in personal vehicle usage to access the Intel site poses a direct challenge to the region's goal of achieving carbon neutrality by 2050 (as part of the forthcoming Central Ohio Climate Action Plan).[54] Intel alone is expected to increase emissions and pollution from associated transportation by between 4% and 7% in the region.[55] This concern is further emphasized by the absence of plans in place to expand public transit connections to the northeast region prior to the beginning of construction.

As growth of this magnitude is inherently regional, public transit is faced with an additional hurdle beyond adoption: transit authorities are typically limited to operating within the county where they were originally established.[56] That additional layer of coordination has added complexity to delivering a viable transportation option alternative to individual vehicles.

However, 2024 has seen progress on a few fronts with mass transit. Cities within counties are becoming better connected, such as through the Newark-Granville Green Line which began operation in March.[57] The Central Ohio Transit Authority (COTA) has been awarded a $1.26 million grant to study efficient transportation between Dublin and New Albany, including the Intel chip manufacturing facility.[58] This east-west study aims to assess the feasibility of connecting key job centers and neighborhoods in the northern part of Columbus, one of Ohio's fastest-growing job markets. The study will consider factors like cost, benefits, and workforce transit needs to determine the optimal route and service. This initiative is seen as crucial for managing future population growth and traffic in the region.

Without intentional planning, the region could see a continuation of traditional suburban development patterns, leading to significant sprawl, particularly in the northeast corner of the region. Such disconnected development patterns further contribute to car dependency and make it more challenging to implement effective public transportation solutions.

Recognizing this, residents approved a ballot measure in November 2024 to expand transit and provide more access to sidewalks and bikeways.[59] The half-penny increase to the current local sales tax would help fund the LinkUS Initiative, a comprehensive mobility solution designed to address growth, affordability, sustainability, and opportunity in the region, while also being used to expand on-demand services, establish new fixed-route lines, and increase the frequency and service hours of existing lines. The levy would also invest in more than 500 miles of new sidewalks, multi-use paths, and bikeways.

Community Disruption and Economic Inequality

Stakeholders have expressed significant concerns about the potential impacts of development on affordable housing and community stability in the region. The rapid influx of workers and their families is expected to put immense pressure on the existing housing market, potentially leading to an exacerbated housing affordability crisis. The Central Ohio region already faces challenges with housing affordability. Over 25% of households in the Columbus MSA are considered cost-burdened, with 74% of those households classified as "extremely" cost-burdened, spending over 50% of their income on housing.[60]

The influx of new residents is likely to further increase demand and drive up housing costs, making it even more difficult for low- and moderate-income households to find affordable options. FRAMEWORK found that there exists a high risk of gentrification and displacement in lower-income communities, particularly in northeast Columbus, as higher-income earners associated with the Intel development move into these areas.[61] This could lead to the displacement of existing residents, disrupting community cohesion and exacerbating social inequalities.

Stakeholders consistently raise concerns about the adequacy of the existing housing stock to accommodate the anticipated population growth. The limited supply of housing, coupled with increased demand, is likely to lead to a tight housing market, driving up prices and making it challenging for both newcomers and existing residents to find suitable and affordable housing. This could also discourage potential workers from relocating to the region while at the same time encouraging sprawl.[62]

The rapid influx of new residents, particularly from outside the region, could lead to social and cultural disruptions in existing communities. Analysis based on the racial makeup of the semiconductor industry workforce suggests a slight decrease in the percentage of white residents and a small increase in Asian and Hispanic residents.[63] While these shifts are numerically modest, they could be more pronounced in specific areas, particularly smaller towns and villages experiencing significant new housing development. Less than 50 miles away, Springfield, Ohio, has become a national example of extraordinary pushback to immigration from non-white communities.[64] Tensions between newcomers and long-time residents, at times exploited for political gain, can arise due to differing values, lifestyles, and expectations.

Communities express concerns about how an increasing population will also lead to heightened demand for public services, including schools, transportation, and social services. These services may not have the capacity to handle the influx, potentially leading to overcrowding, strained resources, and longer wait times. This could negatively impact the quality of life for both existing and new residents.[65]

In support of Intel's locating to the region, AEP Ohio submitted plans to spend $95 million for upgrades to the electric grid. Whereas companies typically have to pay 40% of costs, Intel is only required to pay $740,000.[66] While Ohio law encourages utilities to support economic development through flexible rate arrangements for large industrial customers, it's important to consider the long-term sustainability of such agreements. Discounted rates for large consumers can shift costs to other ratepayers, including residents and small businesses. October 2024 saw a flurry of activity at the PUCO as AEP Ohio and data center companies negotiate new rate structures that balance consumer protection with economic development.[67]

As well, Licking County is predominantly characterized by prime agricultural soils, covering a substantial 89% of the land, a trend consistent with Central Ohio.[68] While the abundance of prime agricultural soil may not directly limit development, the emergence of low-density, large-lot residential developments can lead to a dispersed pattern that fragments land, creating conflicts with agricultural activities and jeopardizing the viability of productive farmland

Additional Concerns and Needs

The following information was gathered during interviews with stakeholders conducted in 2023. Context from FRAMEWORK has been integrated as appropriate.

Preparedness of Local Governments

Local governments in the region are grappling with the challenges posed by the exceptional development spurred by Intel's arrival. While recognizing the potential economic benefits, there is a pervasive sense of being caught off guard by the speed and scale of the changes underway. This lack of preparedness is evident in various aspects of local governance, including planning, regulation, infrastructure, and community engagement.

- **Lack of Framework and Playbook:** Many local governments and organizations feel unprepared for the rapid pace of development, expressing a sense of urgency to establish regulations, seek guidance, and mobilize their communities. The FRAMEWORK initiative is a step toward addressing this need, but there are concerns about the lack of environmental expertise involved in the project.
- **Limited Empowerment and Capacity:** There is a widespread acknowledgment of gaps in local government capacity to effectively respond to the challenges posed by Intel's arrival. These gaps manifest as:
  - **Regulatory Enforcement:** State and federal preemption as well as pressure from the private sector can often limit the capacity or willingness for enforcement by local governing bodies.
  - **Staffing and Expertise:** Several organizations and local governments lack the staff time and specialized knowledge, particularly in environmental matters, to adequately address emerging issues and advocate for their communities' interests.
  - **Technical Skills:** There is a recognized need for enhanced technical skills, such as GIS mapping and analysis, to effectively identify, monitor, and respond to environmental challenges associated with development.
- **Inadequate and Siloed Planning:** Concerns about inadequate planning are evident in:
  - **Transportation:** The widening of State Route 161 is a source of worry due to its implications for air quality and traffic congestion. There is a perceived lack of coordination between transportation planning and other areas, such as housing.
  - **Housing:** Ensuring affordable housing options for both existing and new residents while preserving community character is a major concern.
  - **Mass Transit:** The limitations of COTA in serving areas outside Franklin County raise concerns about equitable access to transportation for Intel employees and the broader community. Developing sufficient mass transit after development has already occurred is often more difficult and expensive.
- **Unpredictable Utility Services:** As discussed in our previous conversation, the unpredictable availability of water and sewer services further complicates planning and development efforts. This unpredictability could lead to inefficient development patterns and potentially exacerbate existing disparities in access to essential services.
- **Gaps in Community Engagement:** There is a perception among some organizations and residents that they have not been adequately included in conversations and decision-making processes related to Intel's development. This lack of inclusion has led to frustration and a sense of being left behind, potentially hindering the development of equitable solutions that benefit all stakeholders.

Stakeholders portray a complex picture of local governments striving to adapt to the unprecedented challenges posed by Intel's arrival. While there is a clear recognition of the need for more robust planning, enhanced capacity, and greater community engagement, the path forward remains uncertain. The FRAMEWORK initiative offers a framework for collaboration and coordinated action, but its ultimate success will hinge on the commitment of local authorities and their ability to overcome existing limitations and address the concerns raised by the community.

Concerns about Decisions with Long-Term Impacts

Stakeholders highlight numerous concerns about the long-term consequences of decisions being made today in response to the rapid development spurred by investment in the region. A consistent theme is the tension between the potential economic benefits of economic development and the need to carefully manage growth to mitigate potential negative impacts on the environment, social equity, and the long-term well-being of the region.

A significant concern is the risk of locking in unsustainable development patterns that will have lasting consequences for the region. The sources emphasize the need to avoid a "suburban sprawl" pattern of development that could consume valuable agricultural land, fragment natural habitats, increase reliance on automobiles, and strain existing infrastructure. Decisions about transportation infrastructure, utility expansion, and land use zoning made today will shape the region's landscape for decades to come.

Weakening Environmental Reviews

In October of 2024, federal legislation was signed for some US semiconductor manufacturing facilities, exempting them from environmental review when subsidies were part of project funding. There had been concern that additional review required under the National Environmental Policy Act of 1969 could potentially stall projects to the point of defaulting on required deadlines.[69]

Solar Bans in Ohio

The recent trend in Ohio is towards local bans on solar projects, particularly large-scale solar farms. This trend is largely attributed to Senate Bill 52, passed in 2021, which granted local governments more authority over solar development.[70] As a result, many counties and townships have implemented restrictions or outright bans on solar projects within their jurisdictions.

The recent trend of local bans on solar projects in Ohio poses several challenges for large corporations seeking renewable energy sources:

- **Project Delays and Uncertainty:** Local bans create significant delays and uncertainty in the development of large-scale solar projects. The approval process becomes more complex and time-consuming, as developers need to navigate potential opposition and restrictions at the local level. This uncertainty can discourage investment and hinder the timely deployment of renewable energy.
- **Increased Costs:** Local bans can lead to increased costs for solar projects. Developers may need to seek alternative sites, which could involve additional land acquisition expenses and transmission infrastructure upgrades. Moreover, the potential for legal challenges and delays can add to the overall cost of projects.
- **Limited Project Size and Scope:** Local bans often restrict the size and scope of solar projects. This can limit the amount of renewable energy that corporations can generate on-site, potentially requiring them to purchase additional RECS with limited local benefits.
- **Impact on Corporate Sustainability Goals:** Many large corporations have ambitious sustainability goals that include reducing their carbon footprint and increasing the use of renewable energy. Local bans can make it more difficult for these companies to achieve their targets, potentially impacting their reputation and brand image.
- **Reduced Economic Benefits:** Solar projects bring significant economic benefits to local communities, including job creation, increased tax revenue, and property value appreciation. Local bans can stifle these benefits, hindering economic development and growth.

Recommendations

Nearly everyone recognizes this as a pivotal moment for the region, offering a significant opportunity for economic growth, but one that also demands careful planning and foresight to avoid potential negative consequences. Stakeholders have identified a wide range of needs across multiple sectors stemming from the recent investments in the Central Ohio region, particularly within western Licking County.

A range of recommendations are provided to mitigate the potential negative consequences of current and future large-scale development in Central Ohio. These recommendations can be grouped into four key areas and address the actions across various sectors in a community.

Infrastructure: Investing in Sustainable and Equitable Infrastructure

1. **Coordinate Utility Expansion:** Implement a comprehensive county-wide utility master plan to coordinate infrastructure investments among the numerous providers, ensuring efficient use of resources and alignment with local development plans. This coordination should involve collaborative decision-making among providers, local governments, and the county.[71]
2. **Time Utility Investments Strategically:** Align utility expansion with anticipated growth in each jurisdiction, allowing local leaders to influence the pace and location of development based on community needs and priorities.
3. **Protect the Public in Rate Structuring:** In negotiations with large industrial customers and utility providers, local leaders should prioritize protecting the interests of residents and small businesses by advocating for policies that prevent undue cost shifting resulting from discounted rates.
4. **Expand Public Transportation:** Invest in and expand public transit options to connect residents to employment centers and reduce reliance on private vehicles. This includes advocating for regional transit solutions that transcend county boundaries, such as bus rapid transit or commuter rail, and promoting the integration of transit planning with land use decisions.
5. **Improve Roadway Infrastructure:** Implement necessary road improvements to address anticipated traffic congestion. This involves considering a wider range of solutions beyond simply widening roads, such as improving traffic flow management, complete streets[72], and enhancing active transportation[73] infrastructure.

Environment: Protecting Natural Resources and Mitigating Impacts

1. **Strengthen Environmental Protections:** Advocate for more rigorous environmental regulations and enforcement mechanisms to mitigate the potential impacts of development on air and water quality, particularly in areas vulnerable to pollution. Stakeholders specifically mention updating floodplain regulations to account for climate change and strengthening stormwater management requirements.
2. **Promote Sustainable Development Practices:** Encourage developers and local governments to adopt sustainable development practices that reduce environmental impacts, such as green building standards, energy efficiency measures, and water conservation strategies.
3. **Conserve Open Space and Farmland:** Implement measures to preserve valuable farmland and open space from development, such as conservation easements, purchase of development rights programs, and zoning regulations that promote compact growth patterns and direct development away from critical environmental areas.
4. **Creation of a Sustainable Development Standard:** Intel's Ohio investment and commitment to sustainability goals provides a valuable blueprint for other communities in Ohio facing future developments. Following suit, Microsoft has recently committed to a more sustainable approach to developing data centers in their Community Pledge.[74] As other large-scale developments seek areas to build and operate, communities could require that new projects commit to similar goals as part of incentives, zoning changes, or other actions taken as part of project approval. A potential outline for how communities can leverage a Sustainable Development Standard could include:

1. **Establish Sustainability as a Priority:**
    - **Community-wide Commitment:** Local governments, businesses, and residents should collectively advocate for sustainable development practices.
    - **Policy Framework:** Develop clear policies and regulations that incentivize and enforce sustainable development standards.
    - **Public Awareness:** Educate the public about the importance of sustainability and the benefits of environmentally friendly projects.
2. **Incorporate Sustainability into Development Agreements:**
    - **Mandatory Requirements:** Demand that developers include specific sustainability goals in their project proposals, such as:
        - Net-zero emissions
        - Net-positive water use
        - Zero waste to landfill
        - Green building certifications (LEED, etc.)
    - **Performance Metrics:** Establish clear metrics to measure and track progress towards these goals.
    - **Reporting Requirements:** Require regular reporting on environmental performance and compliance with sustainability standards.
3. **Leverage Incentives and Partnerships:**
    - **Financial Incentives:** Offer tax breaks, grants, or other financial incentives to developers who prioritize sustainability.
    - **Public-Private Partnerships:** Collaborate with businesses, nonprofits, and academic institutions to develop innovative solutions and share best practices.
    - **Community Engagement:** Involve local residents in the decision-making process and seek their input on sustainability priorities.
4. **Learn from Intel's Experience:**
    - **Benchmarking:** Use Intel's project as a benchmark to assess the sustainability performance of other developments.
    - **Knowledge Sharing:** Foster collaboration between Intel and other developers to share lessons learned and best practices.
    - **Adapting to Local Context:** Tailor sustainability goals to the specific needs and resources of each community.

By adopting a sustainable development standard model, Ohio communities could help to ensure that future developments contribute to a more sustainable and resilient future for the state. This approach not only protects the environment but also creates long-term economic benefits and enhances the quality of life for residents.

Community Building: Preserving Community Character and Fostering Inclusion

1. **Enhance Aesthetics and Design Standards:** Implement design guidelines and standards that promote high-quality development, preserve community character, and ensure compatibility with existing neighborhoods. This involves regulating elements such as building design, landscaping, signage, and lighting to minimize visual impacts, particularly in areas with sensitive landscapes or a distinct rural character.
2. **Strengthen Community Engagement:** Ensure meaningful community involvement in the planning process to incorporate resident perspectives, address concerns, and foster a sense of ownership in development decisions.
3. **Support Schools and Public Services:** Provide adequate funding and resources to schools, healthcare facilities, and other essential public services to accommodate the needs of a growing population and prevent strain on these systems. This may involve exploring innovative funding mechanisms, such as impact fees, and ensuring that development contributes to the overall fiscal health of the community.

4. **Community Preparedness Toolkit:** The rapid development spurred by Intel's arrival in Licking County, Ohio, caught many communities off guard. To help these communities navigate the complexities of such rapid growth, a comprehensive toolkit could be created. This toolkit would serve as a roadmap, guiding communities through planning, decision-making, and community engagement processes. A toolkit could address several key areas:

    1. **Rapid Response:** A framework for quickly assessing potential impacts, engaging the community, and forming a rapid response team.
    2. **Planning and Regulation:** Model ordinances, best practices for sustainable development, and strategies for protecting natural resources.
    3. **Capacity Building:** Resources for staffing, training, technical expertise, and data analysis tools.
    4. **Community Engagement:** Strategies and tools for inclusive and equitable community engagement.
    5. **Funding and Financing:** Information on traditional and innovative financing mechanisms and grant writing resources.

    The toolkit should be user-friendly, adaptable to local contexts, and regularly updated to ensure its effectiveness. By providing communities with these resources and guidance, the toolkit can empower them to make informed decisions, engage residents meaningfully, and shape a sustainable, equitable, and resilient future.

Regional Collaboration: Fostering Collaboration and Coordinated Planning

1. **Promote Intergovernmental Agreements (IGAs):** Encourage collaboration among local jurisdictions through formal agreements to address issues that transcend municipal boundaries. This includes exploring joint review processes for development proposals, sharing information and resources, and coordinating infrastructure investments.
2. **Establish Accord Bodies:** Consider implementing accord bodies, modeled after those in Franklin County, to provide a forum for neighboring jurisdictions to jointly review development proposals and ensure consistency with regional plans.
3. **Enhance Communication and Information Sharing:** Foster regular communication and information sharing among local governments, developers, community organizations, and other stakeholders to facilitate coordinated planning, transparency, and a shared understanding of the challenges and opportunities associated with the development.
4. **Develop an Inclusive Growth Strategy Which Centers Sustainability:** Advocate for the creation of a proactive regional growth strategy that holds sustainability as a core guidepost, while addressing the multifaceted impacts of large-scale development. Stakeholders consistently emphasize that current regional strategies and frameworks lead with economic development, often leaving environmental issues as an afterthought, or addressed just enough to lessen community opposition. As well, stakeholders also note that current regional strategies may not have been developed holistically (for instance, considering economic development activities in conjunction with transportation plans - as was seen strongly with Intel), nor do they have the necessary “teeth” to ensure development occurs in line with them, such as MORPC’s Regional Sustainability Agenda.

    Development presents both challenges and opportunities for the region. Establishing a shared vision for sustainable and equitable growth in the region, with a commitment to collaboration, proactive planning, and community engagement, can help mitigate the negative impacts and ensure that the benefits of the development are shared by all.

Conclusion

Central Ohio stands at a pivotal moment, experiencing unprecedented growth fueled by the burgeoning technology sector. While this surge presents significant economic opportunities, it also necessitates careful consideration of its environmental, social, and long-term implications.

A balanced approach to development is crucial, one that harmonizes economic growth with sustainability. This requires:

- **Proactive Planning:** Collaborative efforts between local governments and stakeholders are essential to create comprehensive plans that guide development, mitigating negative impacts and maximizing benefits across sectors like transportation, housing, infrastructure, and environmental protection.
- **Sustainable Development Practices:** Developers and local authorities must prioritize environmentally responsible practices, such as energy efficiency, water conservation, and renewable energy utilization.
- **Community Engagement:** Meaningful resident involvement in decision-making processes is imperative to ensure development aligns with community values and addresses local concerns.
- **Regional Collaboration:** Addressing the complex challenges and opportunities of growth demands cross-jurisdictional cooperation, including coordinated infrastructure investments, shared resources, and the development of regional plans that promote sustainable and equitable development.

This report, and others developed in response to the region's growth, can serve as a catalyst for action. As an initial step, the Ohio Environmental Council is developing a toolkit to support local organizations and governments in proactively addressing potential development in their communities. By embracing sustainable development, we can ensure that Central Ohio remains a vibrant, equitable, and resilient region for years to come.

It is important to note that sustainability and development are not mutually exclusive. Indeed, sustainable development and communities that can provide health along with prosperity will be the key to future competitiveness. Central Ohio possesses the potential to emerge as a model for sustainable development. Its robust economy, commitment to education, and high quality of life make it an attractive destination for businesses and residents. However, realizing this potential necessitates a collective commitment from all stakeholders to prioritize sustainability, equity, and the long-term well-being of the region.

Notes

[1] Google to invest another $2.3 billion in central Ohio data centers. WOSU Public Media. June 18, 2024. https://www.wosu.org/2024-06-18/google-to-invest-another-2-3-billion-in-central-ohio-data-centers.

[2] With Flexibility and Initiative, Hilliard Attracts Investment and Innovation. The Columbus Region. August 27, 2024. https://columbusregion.com/content-hub-article/hilliard-attracts-investment-and-innovation/.

[3] Through a public-private partnership with the City of New Albany, the New Albany Company has developed a Master Plan for the city including the currently 9,000 acre International Business Park. The 2021 map outline was created from the New Albany Master Plan that was available on the website in 2022. The 2024 map is currently available at: https://newalbanycompany.com/master-plan/maps/.

[4] Data provided by Baxtel. https://baxtel.com/map.

[5] Google invests $1.7B in Ohio data center campuses. Construction Dive. August 30, 2023. https://www.constructiondive.com/news/google-ohio-data-center-campus-expansion-columbus-lancaster-new-albany/692216/.

[6] Microsoft has acquired nearly 700 acres of land to develop multiple data center campuses by 2028. Data Center Dynamics. May 13, 2024. https://www.datacenterdynamics.com/en/news/microsoft-buys-more-land-outside-columbus-ohio/.

[7] QTS Expands Development into Ohio. QTS Data Centers. November 27, 2023. https://qtsdatacenters.com/resources/articles/construction-blog-nov-23.

[8] DBT Data is building over 1 million square feet of data centers. The Columbus Dispatch. September 2, 2022. https://www.dispatch.com/story/business/2022/09/02/another-major-data-center-headed-for-new-albany/65467957007/.

[9] New Albany lands another $3.25B in data center projects from Edged Energy, QTS. Columbus Business First. November 23, 2023. https://www.bizjournals.com/columbus/news/2023/11/22/edged-energy-new-albany-data-center.html.

[10] Vantage Data Centers plans $185m campus in New Albany, Ohio. Data Center Dynamics. June 27, 2024. https://www.datacenterdynamics.com/en/news/vantage-data-centers-plans-185m-campus-in-new-albany-ohio/.

[11] New Albany in line for $150 million data center from Dallas-based CyrusOne. Columbus Business First. April 1, 2024. https://www.bizjournals.com/columbus/news/2024/04/01/cyrusone-data-center-new-albany-ohio.html.

[12] See footnote 10.

[13] Massive industrial park under construction in far west Columbus. Columbus Business First. February 13, 2023. https://www.bizjournals.com/columbus/news/2023/02/14/west70-logistics-center-far-west-columbus.html.

[14] High energy: Illuminate USA hires 1,000 employees, makes 1 million solar panels. Newark Advocate. August 20, 2024. https://www.newarkadvocate.com/story/news/local/pataskala/2024/08/20/pataskala-factory-hires-1000-employees-makes-1-million-solar-panels/74743851007/.

[15] Huge new warehouse in New Albany targets Intel suppliers. The Columbus Dispatch. August 3, 2023. https://www.dispatch.com/story/business/2023/08/03/huge-new-warehouse-in-new-albany-targets-intel-suppliers/70514315007/.

[16] CMH Next: Building the future of air travel in Columbus. Columbus Regional Airport Authority. August 23, 2024. https://flycolumbus.com/cmh-next-building-the-future-of-air-travel-in-columbus/.

[17] Amgen Officially Opens New Albany Facility. City of New Albany. February 26, 2024. https://newalbanyohio.org/news/2024/02/amgen-officially-opens-new-albany-facility/.

[18] FRAMEWORK includes 15 jurisdictions who are focused on understanding the impacts—and identifying the potential benefits—of anticipated investments from the public and private sectors, catalyzed by the investment from Intel. https://frameworklc.org/about/.

[19] FRAMEWORK's final report is available on their website: https://frameworklc.org/resources/.

[20] See "Chapter 7: What Should We Do?". FRAMEWORK Communities of Licking County Final Report. September 2023.

[21] Intel provides select data for its facilities across the world, available here: https://www.exploreintel.com/.

[22] UNPREDICTABLEcity currently conducts environmental modeling and energy planning for 50 local governments through Power a Clean Future Ohio's no-cost technical assistance program, is contributing environmental modeling to both the Columbus MSA's and the Cincinnati MSA's Climate Pollution Reduction Grant (CPRG) planning grants, and led the analyses behind the Industrial Heartland Solar Coalition's $156 million Solar For All award and Cuyahoga County's $129 million award as part of the CPRG Phase 2. UNPREDICTABLEcity has previously conducted analyses for the Ohio Air Quality Development Authority, the Energy Foundation, the Mid-Ohio Regional Planning Commission, and the Greater Cleveland Partnership.

[23] The Multi-Resolution Land Characteristics (MRLC) consortium is a group of federal agencies who coordinate and generate consistent and relevant land cover information at the national scale for a wide variety of environmental, land management, and modeling applications. https://www.mrlc.gov/.

[24] Project Cardinal Permit – Intermediate Approval 401 Wetlands Licking DSW401227893W. Ohio Environmental Protection Agency. June 24, 2022. https://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=1854739.

[25] See page 16 of "Chapter 2: Executive Summary". FRAMEWORK Communities of Licking County Final Report. September 2023.

[26] "Kristy Hawthorne, program administrator for the Licking County Soil and Water Conservation District, said it will be a challenge for New Albany to secure a [test well drilling] permit to work on the Geiger site, because of a pending citation. The site owner and Shelly Materials have been cited for violating floodplain regulations, and Hawthorne said no work can be done on the land where the violation occurred until that violation has been resolved." *Granville Officials Say They Will Fight New Albany Request for Permit to Drill Test Well for Intel Water*. The Reporting Project. February 6, 2024.

[27] See "Chapter 6: How Does Infrastructure Impact Planning". FRAMEWORK Communities of Licking County Final Report. September 2023.

[28] Several facilities have mentioned Intel in their NPDES Request for Additional Discharge permit applications when considering expansion of services. See the Ohio EPA's eDocument Search at: https://edocpub.epa.ohio.gov/publicportal/edochome.aspx.

[29] Central Ohio Population Resource Hub. Mid-Ohio Regional Planning Commission. https://experience.arcgis.com/experience/cd446109151f474db74b13fa0795023c/.

[30] Intel Ohio Air Pollution Permit-to-Install approved by the Ohio EPA (letter dated September 20, 2022) available at: http://wwwapp.epa.ohio.gov/dapc/permits_issued/2290948.pdf.

[31] Projections were developed by UNPREDICTABLEcity and are based on data provided by Intel (exploreintel.com) and approved permits by the Ohio EPA.

[32] Energy Information Administration. https://www.eia.gov/state/data.php?sid=OH.

[33] Emissions were calculated by UNPREDICTABLEcity based on carbon-dioxide equivalent rates and methodology provided by the US EPA. https://www.epa.gov/egrid.

[34] See footnote 29.

[35] 2022 greenhouse gas emissions for Licking County we assessed as part of the Columbus MSA's Climate Pollution Reduction Grant and are currently expected to be submitted to the US EPA by December of 2025. The City of Columbus had previously posted their greenhouse gas inventories on the City's website; however, they are not available as of November 18, 2024. The 2019 inventory conducted by the Mid-Ohio Regional Planning Commission is available here: https://morpc.org/2023/wp-content/uploads/2023/02/FINAL-City-of-Columbus-2019-GHG-Inventory-Update-10012020.pdf.

[36] UNPREDICTABLEcity estimated the energy consumption based on the macroeconomic impacts of 3,000 additional employees and their families locating in Central Ohio, proximal to the Intel facility. Emissions were then calculated using standard methodologies provided by US EPA. Emissions from other developments noted in this report were not assessed.

[37] For more information about RECS, please visit the US EPA's website: https://www.epa.gov/green-power-markets/renewable-energy-certificates-recs. As well, ICLEI USA, developer of the leading greenhouse gas inventory tool in the US, has developed this guidance for organizations using RECS as part of their carbon accounting: https://icleiusa.org/resources/iclei-usa-renewable-energy-credit-guidance-for-u-s-local-governments/.

[38] Information on planned solar facilities in Ohio can be found on the Ohio Power Siting Board's website: https://opsb.ohio.gov/about-us/resources/solar-farm-map-and-statistics.

[39] As data centers look south, here's why Central Ohio's market is still on 'forefront'. Columbus Business First. September 9, 2024. https://www.bizjournals.com/columbus/news/2024/09/09/center-ohio-data-center-eye-south-still-strong.html.

[40] It should be noted that these are new project requests, which may provide an inflated sense of the actual future need for this transmission. For example, a customer might be evaluating a 50MW project in 3 possible locations and put in 3 applications showing a combined total request of 150MW. What a request for an additional 30,000 MW of transmission is indicative of, however, is the strength of the desire companies have in locating large-scale facilities within the region and their expected reliance on grid-supplied energy.

[41] Despite multiple news sources quoting 5 million gallons of water being used per day by Intel, in a correspondence between Intel and the Ohio Environmental Council (dated May 6, 2024) Intel clarified the correct amount is 6 million gallons as a not-to-exceed amount, rather than daily usage.

[42] Microsoft gets approval for data center campus in Licking County, Ohio. Data Center Dynamics. June 26, 2024. It should be noted that Microsoft says this will be for extraordinary circumstances such as on particularly hot days. https://www.datacenterdynamics.com/en/news/microsoft-gets-approval-for-data-center-campus-in-licking-county-ohio/.

[43] Relayed to the OEC in the May 6th correspondence (see footnote 40).

[44] New Albany's Search for Water for Intel Goes Far Beyond Granville. The Columbus Dispatch. November 19, 2023. https://www.dispatch.com/story/business/energy-resource/2023/11/19/new-albanys-search-for-water-for-intel-goes-far-beyond-granville/71583206007/.

[45] This concern was raised in stakeholder interviews by multiple organizations and elevated as one of the highest priority issues to address.

[46] See page 20 of "Chapter 2: Executive Summary – Provision of Public Utilities". FRAMEWORK Communities of Licking County Final Report. September 2023.

[47] Water package plants are prefabricated treatment facilities that are used to treat wastewater or surface water in small communities or on individual properties. For more information, visit the US EPA resource at: https://www3.epa.gov/npdes/pubs/package_plant.pdf.

[48] See footnote 42.

[49] See footnote 42.

[50] Asphalt plants proposed near Alexandria raise pollution concerns along Raccoon Creek. Newark Advocate. March 14, 2023. https://www.newarkadvocate.com/story/news/local/2023/03/13/asphalt-plants-proposed-near-alexandria-raise-pollution-concerns/70000023007/.

[51] Licking County Rejects the Shelly Co.'s Asphalt, Concrete Plant Appeal. Newark Advocate. November 26, 2023. https://www.newarkadvocate.com/story/news/local/granville/2023/11/26/licking-county-rejects-the-shelly-co-s-asphalt-concrete-plant-appeal/71701413007/.

[52] USGS Mineral Commodity Summaries 2024. https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-cement.pdf.

[53] See the Intel Impact Study: Peer Cities Analysis conducted by AECOM for the Columbus Foundation in 2023, available at: https://columbusfoundation.org/news-reports/community-research.

[54] As part of the Climate Pollution Reduction Grant planning phase, the Columbus MSA must develop a plan to achieve carbon-neutrality by 2050. More information can be found on the project website, here: https://experience.arcgis.com/experience/de67bf70d8a641f0a81afbfce5051c0f.

[55] Additional transportation emissions were estimated by UNPREDICTABLEcity for the increased population and economic activity (direct, indirect, and induced) expected due to development of the Intel facility.

[56] To serve multiple jurisdictions, Ohio Revised Code 306.31 requires participating communities to formally create and join a regional transit authority. https://codes.ohio.gov/ohio-revised-code/section-306.31.

[57] Licking County Transit's New Bus Route Connects Granville to Newark. Newark Advocate. March 6, 2024. https://www.newarkadvocate.com/story/news/local/granville/2024/03/06/licking-county-transits-new-bus-route-connects-granville-to-newark/72717350007/.

[58] COTA to Study Dublin-New Albany Route to Meet Demand for New Jobs Fueled by Intel Growth. The Columbus Dispatch. February 27, 2024. https://www.dispatch.com/story/news/local/2024/02/27/state-grants-awarded-to-cota-for-northern-cross-town-route-study/72698861007/.

[59] Central Ohio Voters Approve Issue 47, Paving the Way for a Modernized COTA Transit System. Central Ohio Transit Authority. November 7, 2024. https://www.cota.com/blog/central-ohio-voters-approve-issue-47-paving-the-way-for-a-modernized-cota-transit-system/.

[60] See the Intel Impact Study: Impact Analysis conducted by AECOM for the Columbus Foundation in 2023, available at: https://columbusfoundation.org/news-reports/community-research.

[61] See footnote 57.

[62] Stakeholder feedback was acquired as part of interviews by UNPREDICTABLEcity for this project. Additional context and data regarding housing issues can be found in both Intel Impact Analyses conducted by AECOM for the Columbus Foundation, available at: https://columbusfoundation.org/news-reports/community-research.

[63] The probable racial characteristics of the new workforce at Intel were estimated by UNPREDICTABLEcity based on census data (https://www.census.gov/library/stories/2023/09/one-chip-at-a-time.html) and compared to local racial characteristics of Central Ohio communities.

[64] Uncertainty in Springfield, the Ohio Town Put on the Map by Trump's False Claims About Immigrants. NBC News. November 16, 2024. https://www.nbcnews.com/news/us-news/uncertainty-springfield-ohio-town-put-map-trumps-false-claims-immigran-rcna179416.

[65] See "Chapter 2: Executive Summary – Managing Development". FRAMEWORK Communities of Licking County Final Report. September 2023.

[66] Electric build up for Intel will cost $95 million, all of AEP Ohio's customers could be on the hook. WOSU. August 2, 2024. https://www.wosu.org/politics-government/2024-08-02/electric-build-up-for-intel-will-cost-95-million-all-of-aep-ohios-customers-could-be-on-the-hook.

[67] AEP Ohio urges PUC to reject 'Hail Mary' data center tariff proposal from Amazon, others. Utility Dive. October 14, 2024. https://www.utilitydive.com/news/aep-ohio-puc-data-center-tariff-proposal-amazon-google-meta-microsoft-constellation/729697/.

[68] See "Chapter 4: How Will We Grow – Existing Conditions". FRAMEWORK Communities of Licking County Final Report. September 2023.

[69] Biden Exempts Some Semiconductor Factories from Environmental Reviews. Reuters. October 2, 2024. https://www.reuters.com/sustainability/boards-policy-regulation/biden-signs-bill-exempting-some-semiconductor-factories-new-environmental-2024-10-02/.

[70] Senate Bill 52 Summary. Ohio Power Siting Board. https://opsb.ohio.gov/news/sb52.

[71] FRAMEWORK notes that there are ten different utility providers in Licking County, each with their own service area. This fragmented system creates challenges for coordinating infrastructure investments. For example, the Southwest Licking Community Water and Sewer District expanded its service area significantly in 2022, potentially impacting other providers. A master plan would help ensure all providers are working in sync. As well, public utilities heavily influence development patterns. Areas with central utilities tend to urbanize faster, while those without rely on less efficient on-site systems like septic tanks. A master plan can guide utility expansion to align with local development plans and the overall vision for the county. This would allow for efficient development that preserves the desired balance between urban and rural areas. For example, without coordination, utilities could be extended into areas slated for conservation, leading to sprawl and environmental damage.

[72] Complete streets are designed and operated to safely accommodate and be accessible to all users, including pedestrians, bicyclists, motorists, and transit riders. This approach often incorporates features like wider sidewalks, bike lanes, accessible curb cuts, and improved crosswalks. Complete streets also contribute to environmental sustainability, public health, and economic vitality by encouraging walking, biking, and public transit use, reducing traffic congestion, and creating more livable communities.

[73] Active transportation refers to any form of human-powered movement, such as walking, biking, or using a wheelchair, as a means of transportation.

[74] Microsoft Data Center Community Pledge: https://blogs.microsoft.com/blog/2024/06/02/microsofts-datacenter-community-pledge-to-build-and-operate-digital-infrastructure-that-addresses-societal-challenges-and-creates-benefits-for-communities/.