Understanding Industrial Development & Site Selection

Industrial Development Workshop

Learn About the Featured Expert:

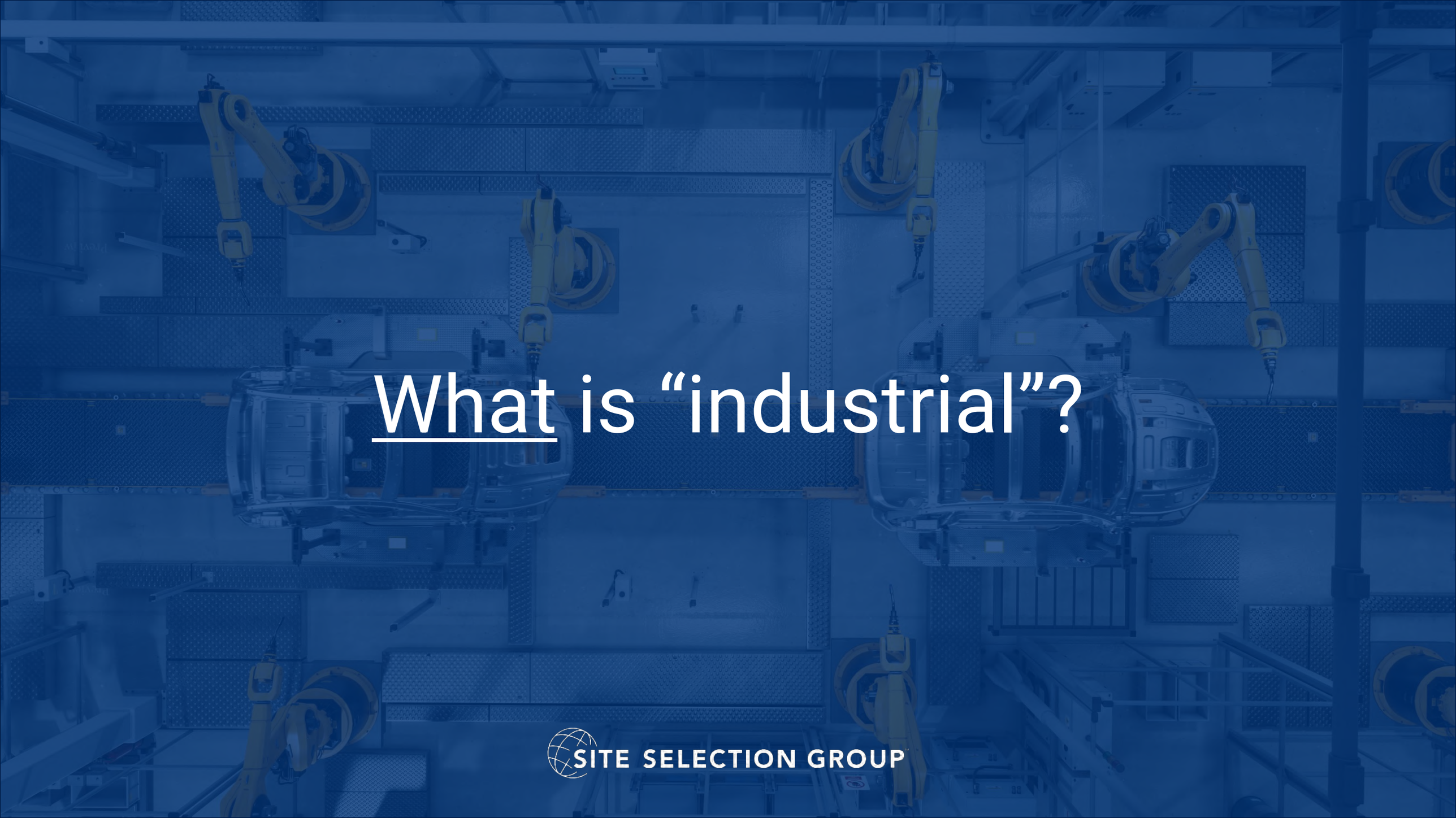
Andrew Ratchford, Site Selection Group

Andrew Ratchford is a Senior Director at Site Selector Group, where he focuses on evaluating sites and infrastructure for developability, capacity, and potential improvements. He manages requests for information, coordinating detailed reports and site visits with clients and community representatives. Andrew also assists economic development organizations by providing strategic improvement plans aimed at making sites more attractive for investment. Additionally, he leads site identification efforts, assembling potential sites based on key industrial factors such as utility access and proximity to major transportation networks.

Before joining Site Selection Group, Andrew built a diverse real estate background, holding key roles across the non-profit, public, and private sectors. His career began in non-profit housing development, where he managed federal housing grants and affordable housing projects. He then transitioned to public sector work as a community and regional planner for Greenville County, South Carolina, supporting planning, entitlement, and ordinance development. In the private sector, Andrew developed and upgraded multi-family assets with Graycliff Capital Partners and conducted site selection advisory services with Global Location Strategies.

With over 13 years of experience in real estate, Andrew concentrates his site development and infrastructure expertise on industrial assets. He has a special interest in energy and brownfield redevelopment, working with clients such as Nacero, Georgia Pacific, Tennessee Valley Authority, Wisconsin Economic Development, CSX Railroad, BNSF Railroad, and Hoosier Energy.

Andrew holds a Master of Business Administration from Clemson University and a Bachelor of Arts in American Studies from North Greenville University. He is proficient in Excel, PowerPoint, various GIS platforms, and PowerBI. Outside of work, Andrew enjoys playing electric and bass guitar, hiking, traveling, and cheering on Clemson University football. He also has a passion for lawn care and enjoys spending time outdoors with his wife, two children, and their dog.



What is “industrial”?

SITE SELECTION GROUP

What is “industrial”?

Industrial is a term that is used fluidly and refers to land uses and operations focused on producing, processing, storing, or moving physical goods.

Are Data Centers considered industrial?

General Categories

- **Heavy Industrial:** High-impact processes with large utility loads, land requirements, and potential emissions. These are typically close to the raw material in the value chain.
    - Steel, pulp & paper, chemical manufacturing, refining, etc.
- **Light Industrial:** Lower-impact processes with moderate to low utility loads, land requirements and potential emissions. These are typically in the middle or end of the value-chain. (e.g.)
    - Assembly, fabrication, packaging, machining, processing
- **Logistics & Distribution:** warehousing, cross-dock facilities, e-commerce
- **Specialized Industrial:** Battery cell production, semiconductors, life sciences, aerospace, etc.
- **Research & Development:** Industrial Research & Development facilities vary. significantly by technology and industry. This could be supported by spec lab space, high bay shared manufacturing spaces, housed within a manufacturer, or be a stand alone “pilot” facility
- **Data Centers**: Large buildings or campuses utilized to convert energy into compute power. Require high-capacity electric systems and often significant water. Their requirements are at “industrial scale” so they are considered an industrial land use even though they produce no physical product.

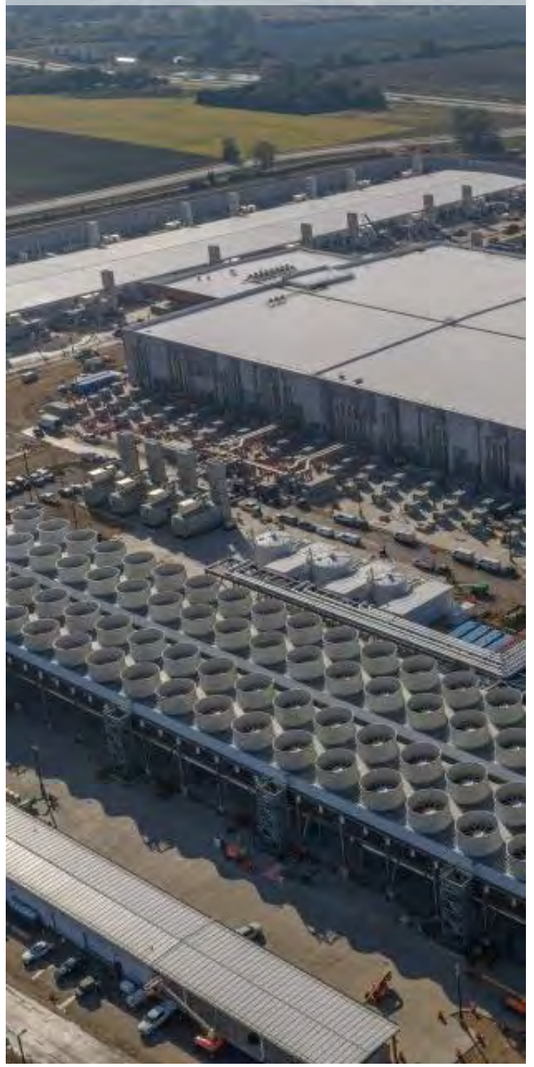
Types of Industrial Users (Overview)

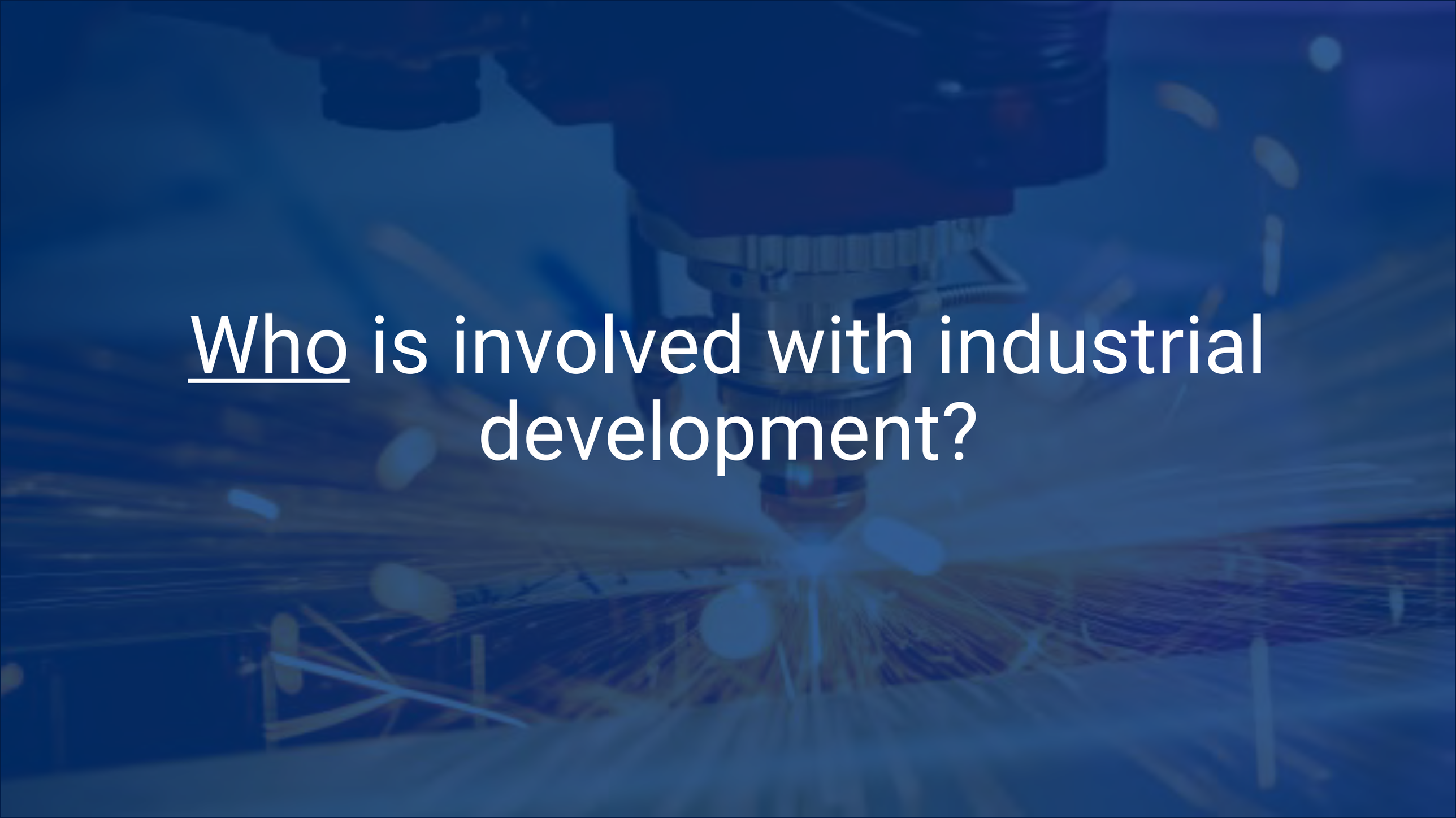
Heavy Industrial

Light Industrial

Logistics & Distribution

Data Center





Who is involved with industrial development?

Who is involved with industrial development?

Key Players

- **Company:** Often an operations team or assembly of business unit leaders are tasked with the task to evaluate whether and where expansion should take place. Some companies choose to complete the site selection and expansion analysis themselves (“self-performing”). Others hire consultants.
- **Site Selection Consultants:** Companies sometimes choose to bring on location advisory consultants to manage this process. This is usually to outsource the bulk of the work, to lean on expertise, and sometimes to provide a buffer for staff if the board is not happy with something or something goes wrong.
- **Brokers & Developers:** Some companies work directly with brokers or developers to make the location decision and to execute on the real estate.
- **Economic Developers:** Representatives from states, regions, local communities, utilities, railroads, and workforce programs support projects as they are considering a location by providing information, supporting tours, and even supporting incentive discussions.
- **Environmental and engineering firms:** Consultants are required to study sites and buildings to identify any potential issues or restrictions.
- **Regulators:** Permitting and zoning officials, building officials, environmental regulators later in the process elected officials may become involved as well.

What is Site Selection?

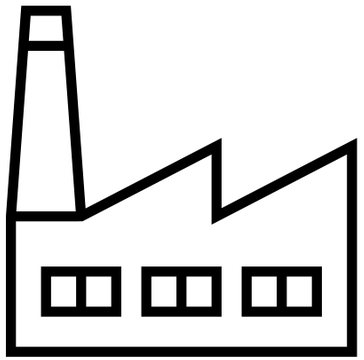
“Site selection is the process of choosing a location for a business, facility, or other types of operations. It involves evaluating and comparing multiple sites to determine the best location based on a variety of factors. This process is critical for the success of the business or operation because the chosen site can significantly impact costs, accessibility, market reach, and overall operational efficiency.”

-Chat GPT

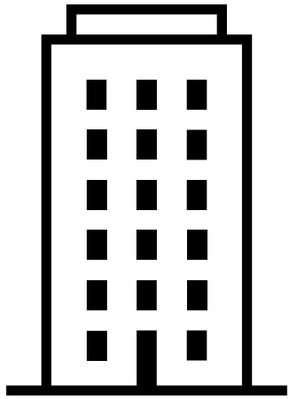
Key Factors

- **Geographic Location:** Proximity to customers, suppliers, and transportation networks.
- **Cost:** Land or rental costs, taxes, utilities, and labor costs in the area.
- **Labor Market:** Availability of skilled labor, labor costs, and local labor laws.
- **Infrastructure:** Quality and availability of transportation, utilities, and telecommunications.
- **Regulations:** Zoning laws, environmental regulations, and business incentives.
- **Market Access:** Proximity to target markets and the ease of reaching them.
- **Quality of Life:** Local amenities, schools, healthcare, and overall living conditions, which can impact the ability to attract and retain employees.
- **Risk Factors:** Natural disaster risks, political stability, and economic conditions.

Who does Site Selection?

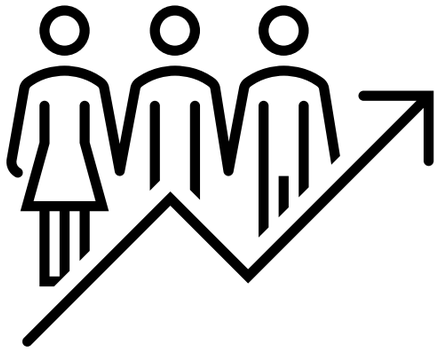


Companies self-performing

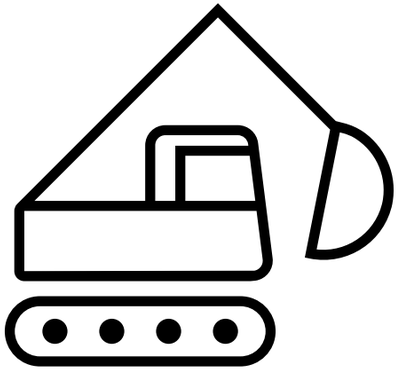


Consultants

- Accounting firms
- Law offices
- Brokerage houses
- Bespoke Site Selection Consultants



Economic Developers



Developers/EPC Firms

Site Selection Process for Industrial Projects

	1 PROJECT DEFINITION	2 LOGISTICS ANALYSIS & GEOGRAPHIC SCREENING	3 CANDIDATE OPTION IDENTIFICATION	4 IN-DEPTH LOCATION ANALYSIS	5 TOURS & SITE DUE DILIGENCE	6 REAL ESTATE & ECONOMIC INCENTIVE NEGOTIATIONS	7 ECONOMIC INCENTIVE COMPLIANCE

KEY CONSIDERATION	◦ Strategy formation
	◦ Business drivers
	◦ Project timeline
	◦ Logistics inputs
	◦ Criteria weighting
	◦ Workforce profile
	◦ Infrastructure needs
	◦ Utility consumption
	◦ Capital investment
	◦ Facility specifications
		◦ Inbound shipments
		◦ Supplier dynamism
		◦ Outbound shipments
		◦ Future growth
		◦ Multi-plant rollout
		◦ Capacity constraints
		◦ Distance/time to customer
		◦ Modes of transportation
		◦ Average utility cost
		◦ Broad labor conditions
		◦ Regulatory climate
		◦ Business environment
			◦ Site requirements
			◦ Baseline utility needs
			  ◦ Electricity
			  ◦ Natural Gas
			  ◦ Water
			  ◦ Wastewater
			  ◦ Industrial gasses
			◦ Transportation modes
			◦ Development timelines
			◦ Economic incentive support
				◦ Demographics
				◦ Workforce quality
				◦ Labor supply & demand
				◦ Employment risk
				◦ Workforce training
				◦ Economic incentives
				◦ Detailed site qualifications
				◦ Infrastructure & utilities
				◦ Business climate
				◦ On-going operating costs
				◦ Local dynamics
					◦ Economic development agencies
					◦ Community leaders
					◦ Workforce commission
					◦ Employer interviews
					◦ Recruitment agencies
					◦ Real estate options
					◦ Infrastructure & utility providers
					◦ Site due diligence
					◦ Permitting
						Economic Incentives
						◦ Tax abatements
						◦ Training grants
						◦ Tax credits
						◦ Cash grants
						◦ Real estate grants
						◦ Infrastructure assistance
						Real Estate
						◦ Economic terms
						◦ Business terms
						◦ Seller commitments
							◦ Annual reporting
							◦ Training reimbursements
							◦ Job creation filings
							◦ Applications
							◦ Contract amendments
							◦ Site audits
							◦ EDC coordination

DELIVERABLE	◦ Project Questionnaire ◦ Project Profile Summary	◦ Logistics Analysis ◦ GeoCision Analysis	◦ Site Screening Matrix ◦ Existing Building Comparison	◦ Operating Cost Analysis ◦ Qualitative Matrix ◦ Detailed Real Estate Evaluations	◦ Tour Materials ◦ Option Ranking Matrix ◦ Refined Operating Cost Analysis	◦ Request for Proposals ◦ Proposal Comparison ◦ Integrated Financial Analysis ◦ Competitive Bidding ◦ Documentation	◦ Compliance Documents ◦ Reimbursement Management ◦ Contract Amendments ◦ IncenTrak Updates
RESULTS	**Understand Client's Objectives & Project Inputs**	**Identify Target Geography (Center of Gravity)**	**Identify Realistic Candidate Options (Sites & Buildings)**	**Comprehensive Desktop Site Selection Analysis**	**Ranking of Semifinalist Locations**	**Contractually Secure Optimal Economic Incentives & Real Estate**	**Compliance of Economic Incentives**

Integration of Outside Environmental, Legal, Design, Engineering, & Construction Resources

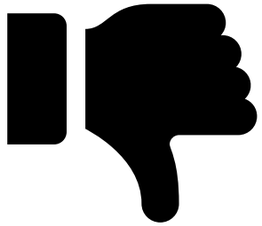
Important things to know about Site Selectors

Specialized Industries

- Office
- Data center
- Electric vehicles
- Aerospace
- Food and beverage manufacturing
- Chemicals
- Etc.

Domestic v. International

Site Selector v. Broker



Signs of a Bad Site Selector

- Lack of Thorough Research
- Ignoring Local Regulations
- Poor Communication Skills
- Inadequate Technology Use
- Bias Towards Certain Locations
- Ignoring Infrastructure
- Cost Overlook
- Disregarding Environmental Impact
- Lack of Flexibility
- Poor Track Record

What is Economic Development?

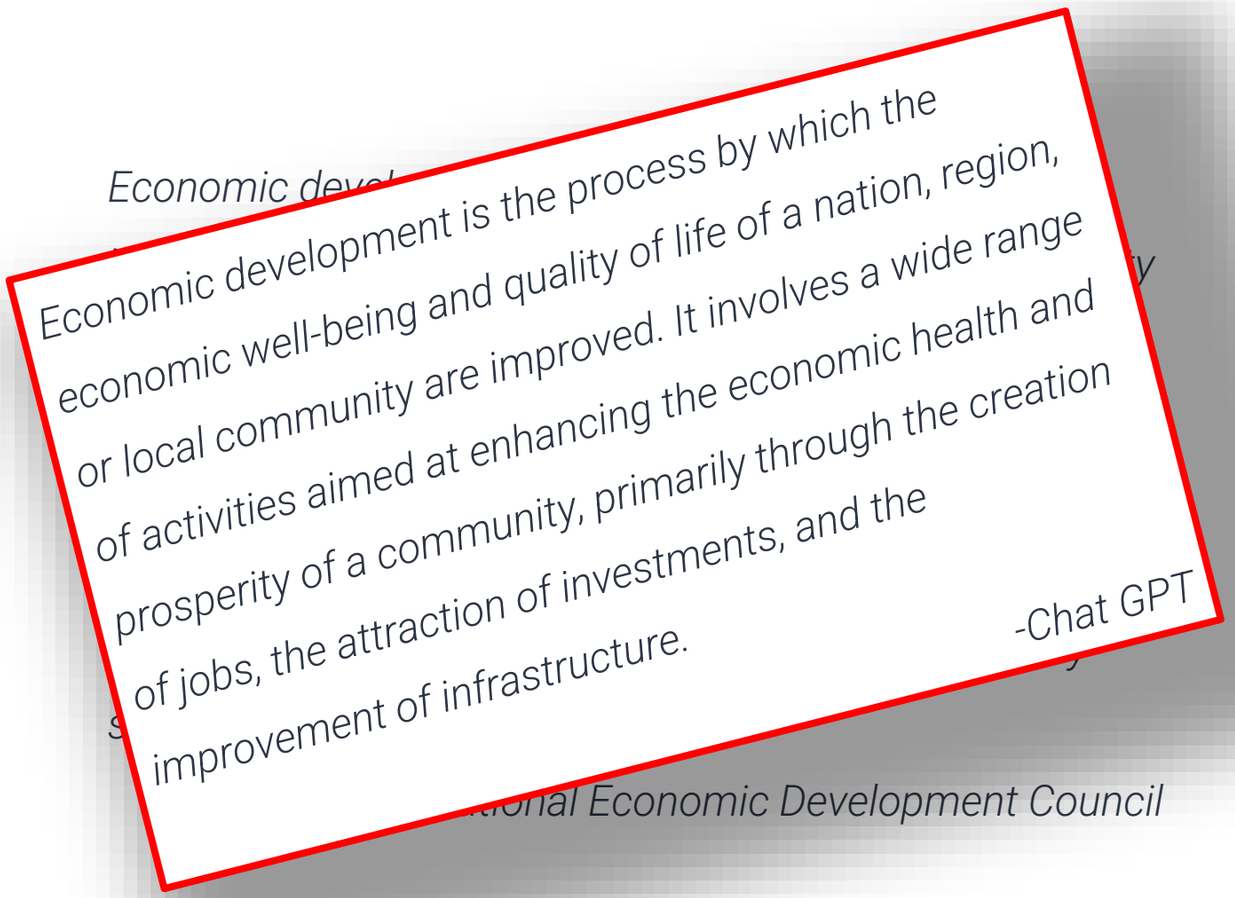
Economic development is the intentional practice of improving a community's economic well-being and quality of life. It includes a broad-range of activities to attract, create, and retain jobs, and to foster a resilient, progrowth tax base and an inclusive economy. The practice of economic development comprises of a collaborative effort involving industry, government and myriad community stakeholders.

-International Economic Development Council

Key Factors

- **Job Creation:** Generating new employment opportunities through business expansion, attraction, and retention.
- **Investment Attraction:** Drawing in capital investments from domestic and foreign sources to stimulate economic growth.
- **Infrastructure/Site Development:** Building and upgrading transportation, utilities, communication networks, and other essential infrastructure.
- **Education and Workforce Development:** Enhancing the skills and capabilities of the local workforce to meet the demands of modern industries.
- **Business Support:** Providing resources, incentives, and support to businesses, including small and medium-sized enterprises (SMEs). This is often referred to as Business Retention and Expansion
- **Innovation and Entrepreneurship:** Encouraging innovation and supporting entrepreneurial ventures to diversify the economic base.
- **Quality of Life Improvements:** Investing in healthcare, education, housing, and recreational facilities to enhance the living standards of residents.
- **Sustainable Development:** Ensuring that economic growth is environmentally sustainable and socially inclusive.

What is Economic Development?



Economic deve

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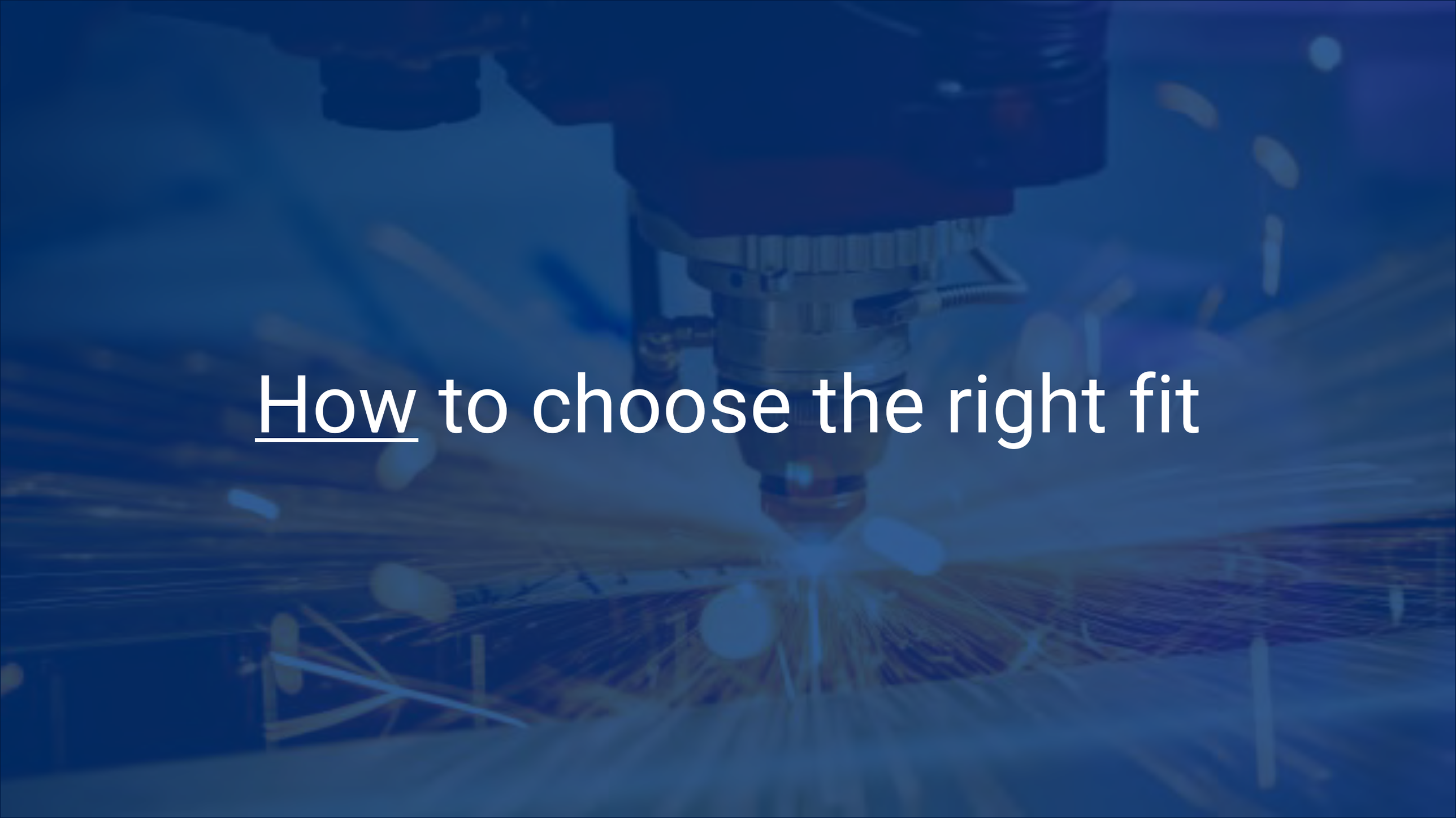
Who does Economic Development?

State	Regional Groups	Counties	Cities
Chambers of Commerce	Industrial Development Agencies	Economic Development Corporations	Public/Private Partnerships
Brokers & Real Estate Agents	Developers	Utilities	Railroads



How to choose the right fit

How to proactively define community goals?

Key Steps

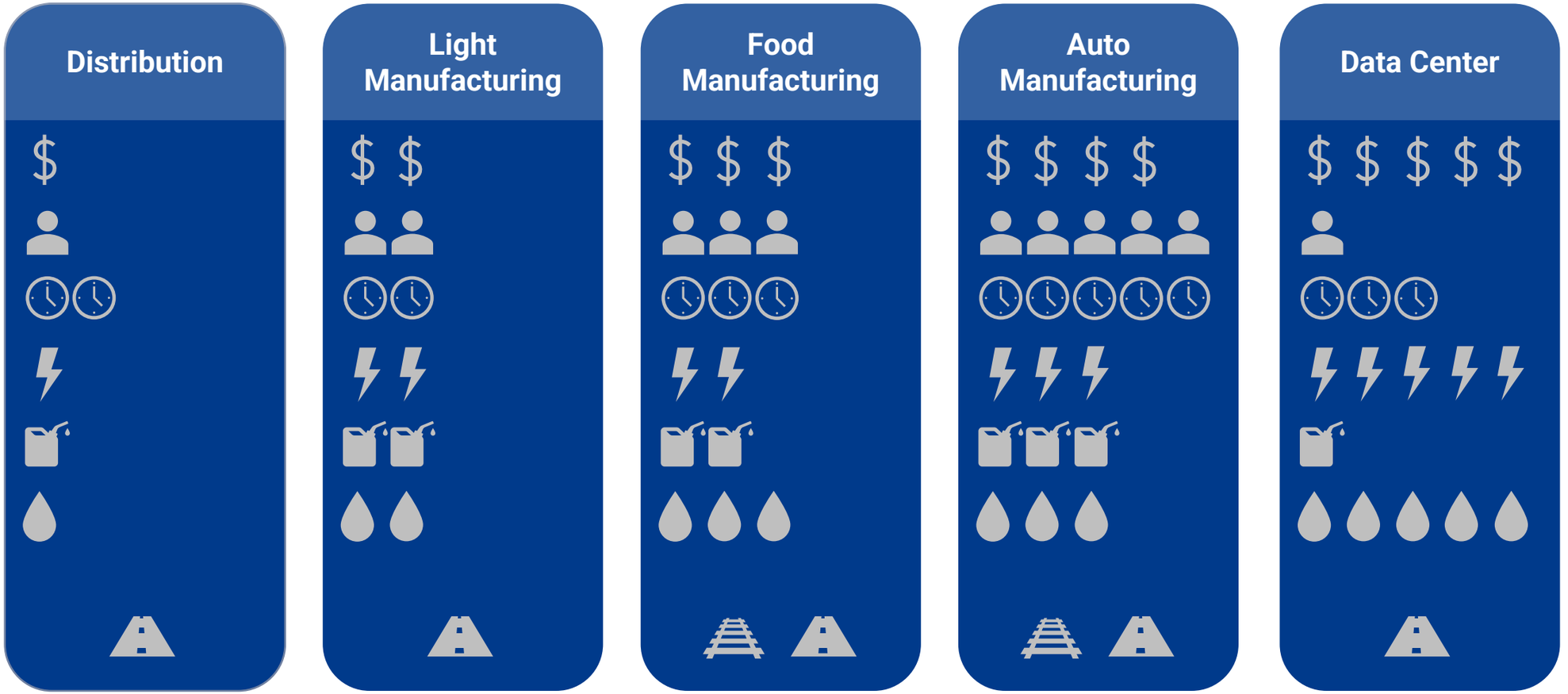
1. **Assess current conditions:** review existing industry mix/land use, available land, infrastructure, workforce, and environmental constraints.
    - Identify key strengths such as rail access, developability, strong utilities, proximity to university or an industry cluster.

2. **Set clear priorities:** Define what your community's top priority is to obtain and to avoid.
    - Hold goal-setting workshops with community leaders, staff, business leaders, and public representatives.
    - Examples: Increase total # of jobs, higher wage jobs, higher tax base, avoid high truck traffic, limit water intake, etc. *Ideally pick no more than 3 dos and don'ts.*

3. **Put vision into policy:** If appropriate, design regulatory guidelines that define key priorities such as traffic impact, visual appearance, noise/odor/sound limitations, environmental impact etc. (zoning, land use, design standards, and future plans).
    - Recommend developing these among a working group that outflows from the goal-setting workshops.

4. **Define a communication strategy:** Clearly define how the community will engage with projects, evaluate them, enforce community goals, and communicate about projects.

Sample Project Type Comparison



Key Notes	Low Investment Low demand High Traffic	Quick Low Operating Cost Moderate demand	Moderate Cap Ex & Job Count Moderate - high Utility demand	High Cap Ex High Employment Large Utility Demand	High Cap Ex Low Employment High Utility demand

Sample Project Type Comparison

Preview:

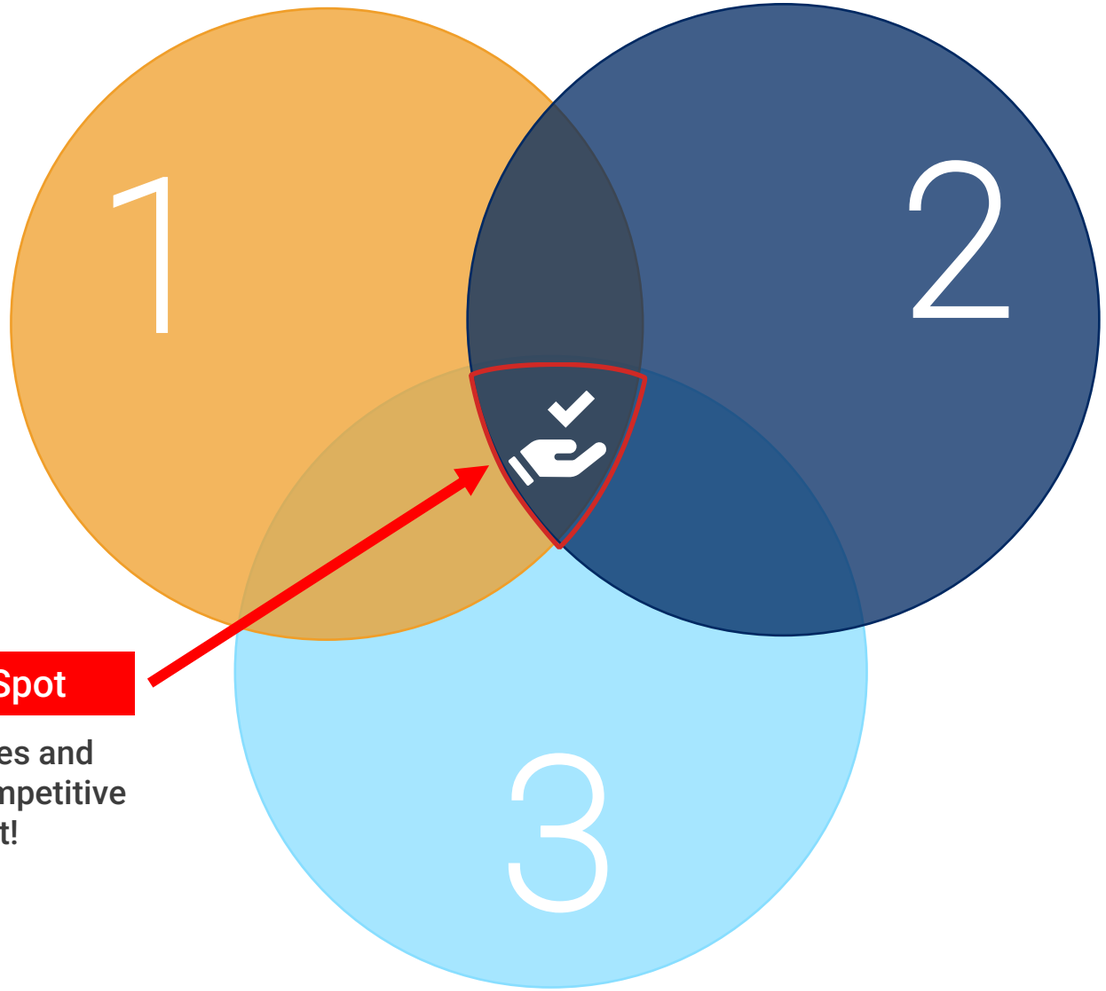
Compare project demands with community goals to understand what industries would be a good fit from a community perspective.

Matching Community Goals for Industrial Development

1 Technical Site Analysis

- Size
- Developability
- Transportation/Logistics
- Utilities
- Other Considerations

How does the site align generally and for specific requirements?



Target Area / Sweet Spot

Focusing on the industries and projects that you are competitive for and you actually want!

2 Competitive Analysis

- Cost Profile
- Workforce Profile

How does the community align generally and for specific requirements?

3 Community Goals

- Jobs vs. High Cap Ex
- Visual or environmental impact
- Traffic impact
- Long-Term Industry Growth
- Positive Economic Impact
- Diversify vs. Clustering

What does the community actually want?

Control through Regulation

Methods

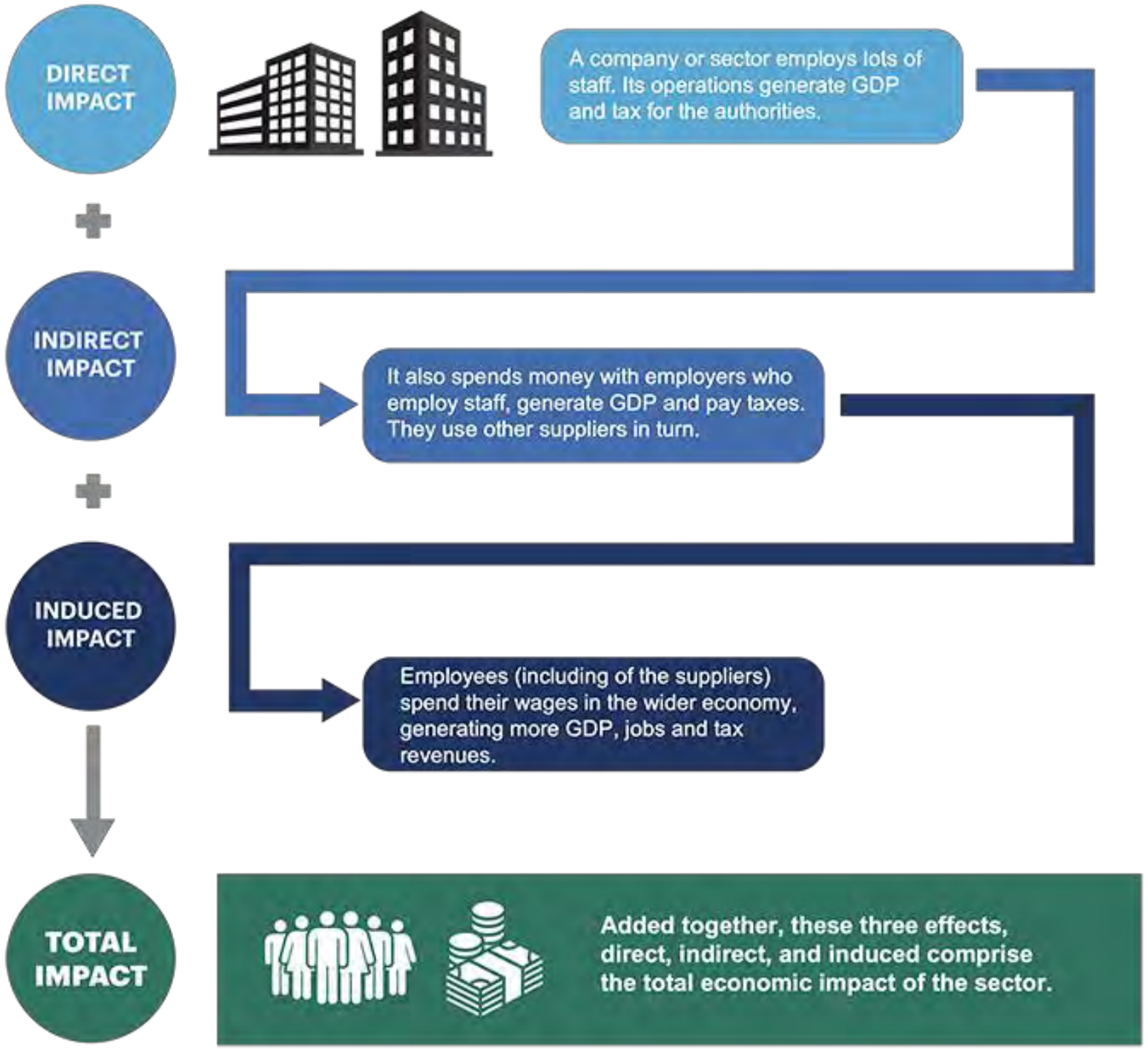
- **Zoning:** Zoning can be used to proactively define use type, architecture requirements, visual impact, density, setbacks, height limitations, odor and sound limitations, impervious surface limitations, intensity of use, etc.
    - *Answers the question: What can go here?*
    - When these regulations are cumbersome, unclear, subject to interpretation, require numerous reviews, and public feedback for a project this introduces risk to an investor.
- **Land Development Regulation (LDR):** LDR's set the rules for infrastructure, access & traffic management, stormwater, landscaping, construction, standards, and more.
    - *Answers the question: How must it be built?*
    - Similar to zoning regulations, this is a standard practice, but, when these regulations are cumbersome, unclear, subject to interpretation, require numerous reviews, and public feedback for a project this introduces risk to an investor.
- **Permitting**: Permitting processes can hinder or speed up progress. Even if permitting requirements are restrictive, if they are clearly communicated with an easy-to-understand process and timeline, permitting can be a positive.
- **Covenants & Restrictions:** Private covenants and restrictions may be part of a community's plan to direct development. These would be applied by developers, non-profits, or individual owners. These are not publicly enforceable.

The Economic Case for Site Control

ROI & Community Impact (The Why)

Direct, Indirect, Induced Economic Impact

- A project's impact is usually defined by the associated number of jobs and capital investment. This is fair but it is only part of the story.
- Investment makes an economic contribution beyond the wages and taxes paid to build and construct a facility. Ongoing costs and the need to procure goods and services both at the business level and the individual level drive additional economic impact.
- Some corporate investments drive greater secondary and tertiary economic benefits than others and this should be considered when evaluating what uses will best drive value for a community.



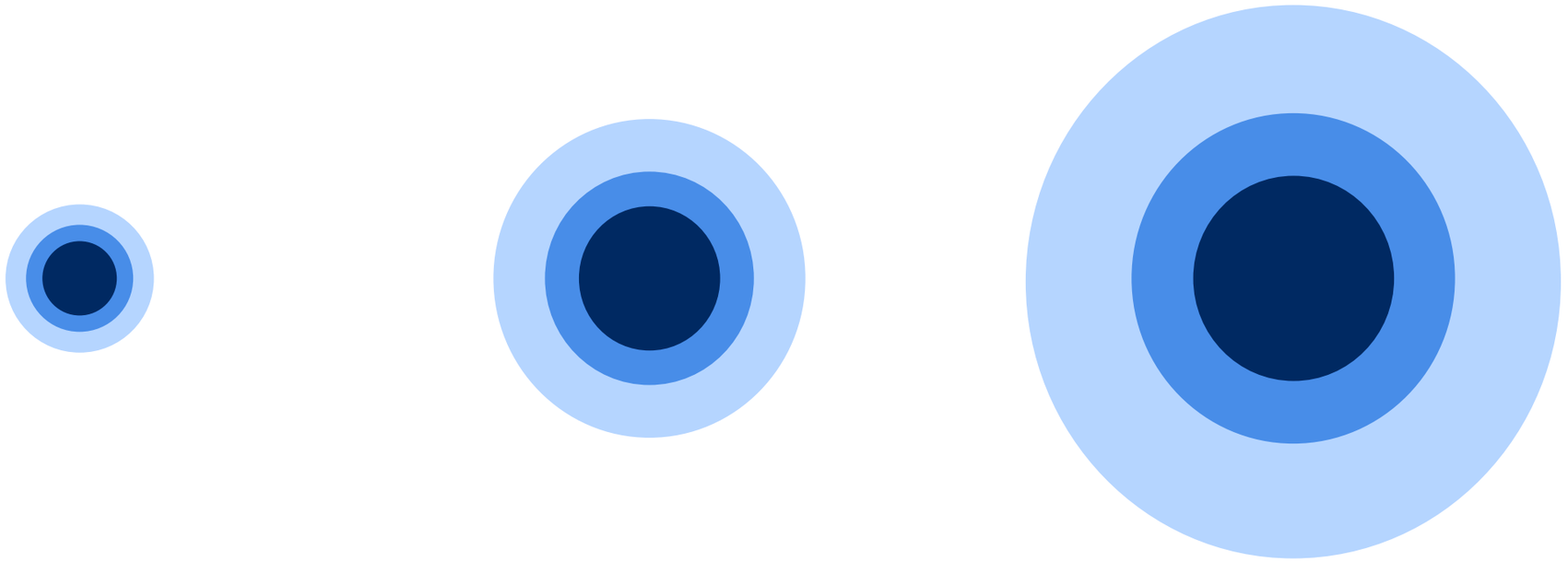
Credit: US Federal Reserve Bank

Total Possible Economic Impact

Small Project
Distribution
(Limited Impact)

Mid-Size Project,
Food Manufacturing
(Moderate Impact)

Large Project
Paper Mill or Auto Manufacturing
(Large Impact)



Economic Impact Value
Small ($) – Large ($$$)

Direct Impact
Indirect Impact
Induced Impact

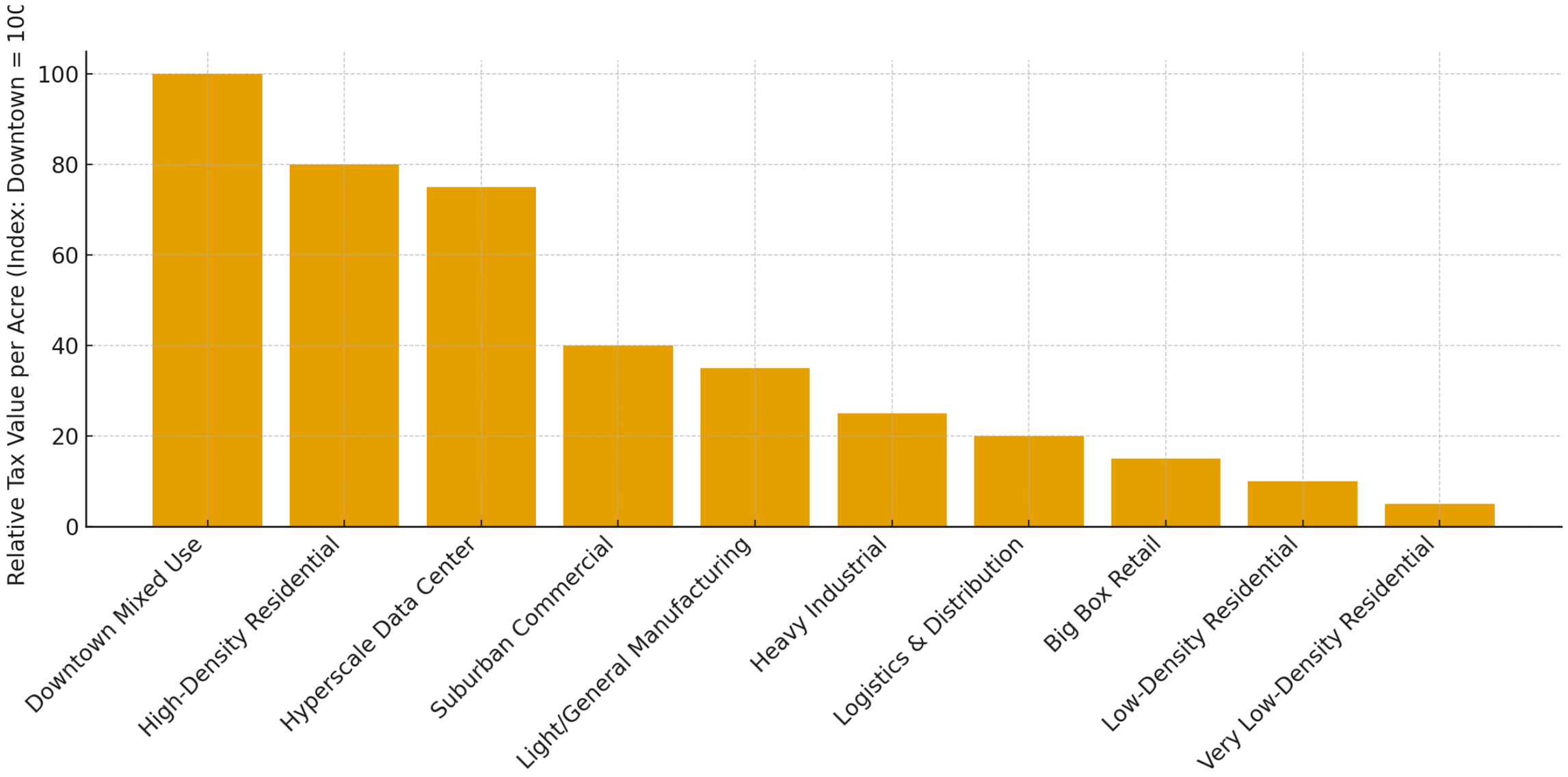
Industrial projects impact economies by investing capital via construction, employment, purchasing and more. Different industries will create different impacts. Depending on the industry type and size, the impact may be more or less direct and have a higher or lower overall impact.

An industrial project's direct impact includes its capital investment and number of new jobs multiplied by their wages. Other impacts contribute as well.

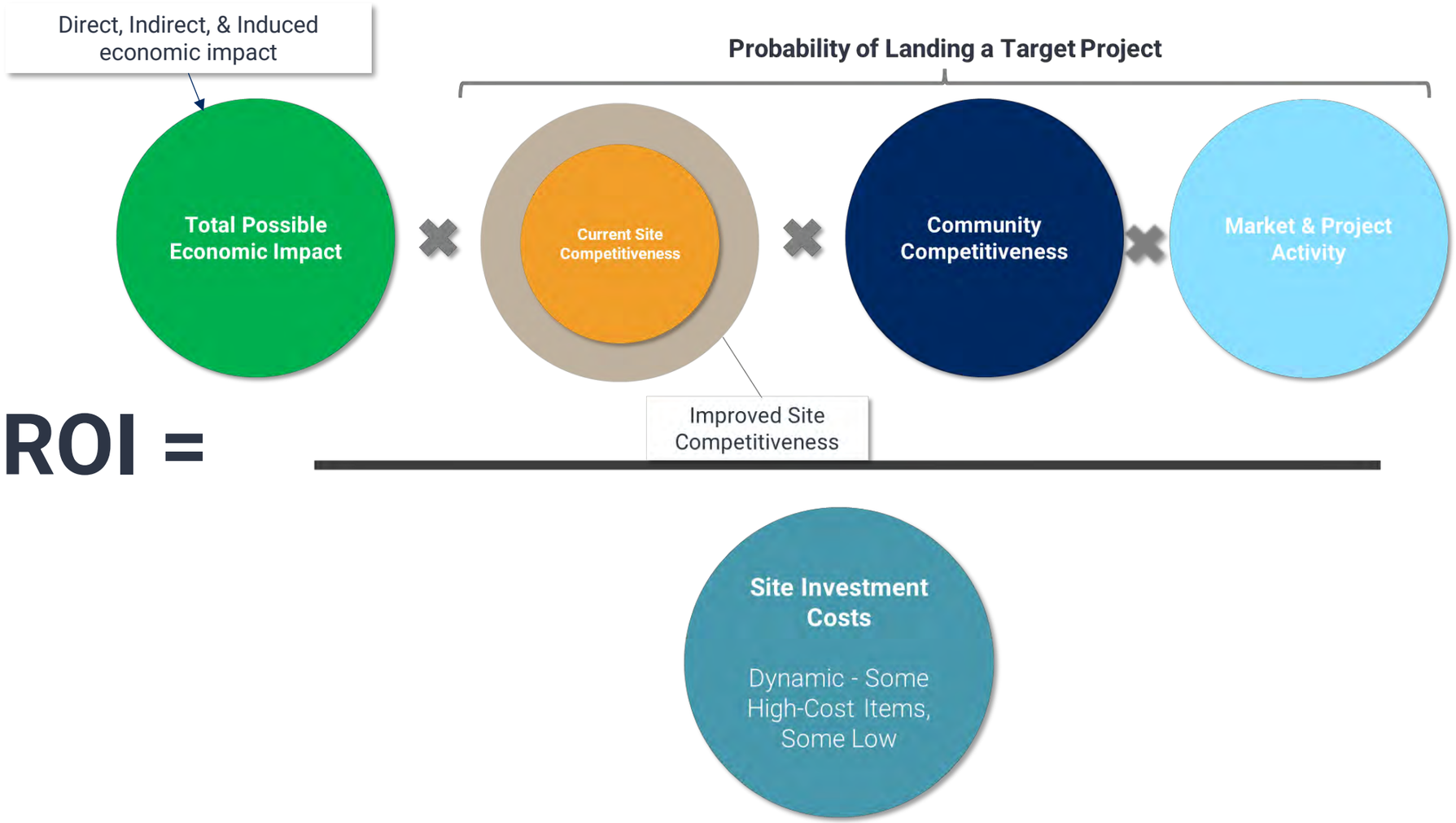
The business's spending with other businesses and the spending employees make in the community also amplify the project's economic impact.

The series of bubbles below display how three different project sizes might economically impact a location.

Relative Tax Value per acre by Land Use Type (Example)



Return on Investment

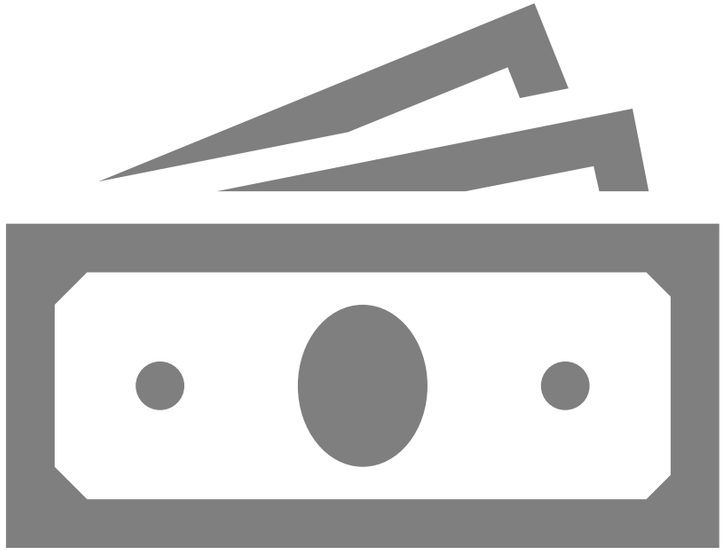


Return on Investment

Taken together, these factors can then be used to develop return or cost/benefit metrics (i.e. ROI, Return Multiples, Payback period, etc.). These metrics provide a comparative set of data which comprehensively considers the project's characteristics, the work that needs to be done on the site, the cost, and the probably of attracting said project allowing users to more easily determine which industries to pursue and what improvements to invest in.

- **Attractive**
  - Costs<Benefits
  - Positive ROI
- **Not Attractive**
  - Costs>Benefits
  - Negative ROI

Consider Additional Costs



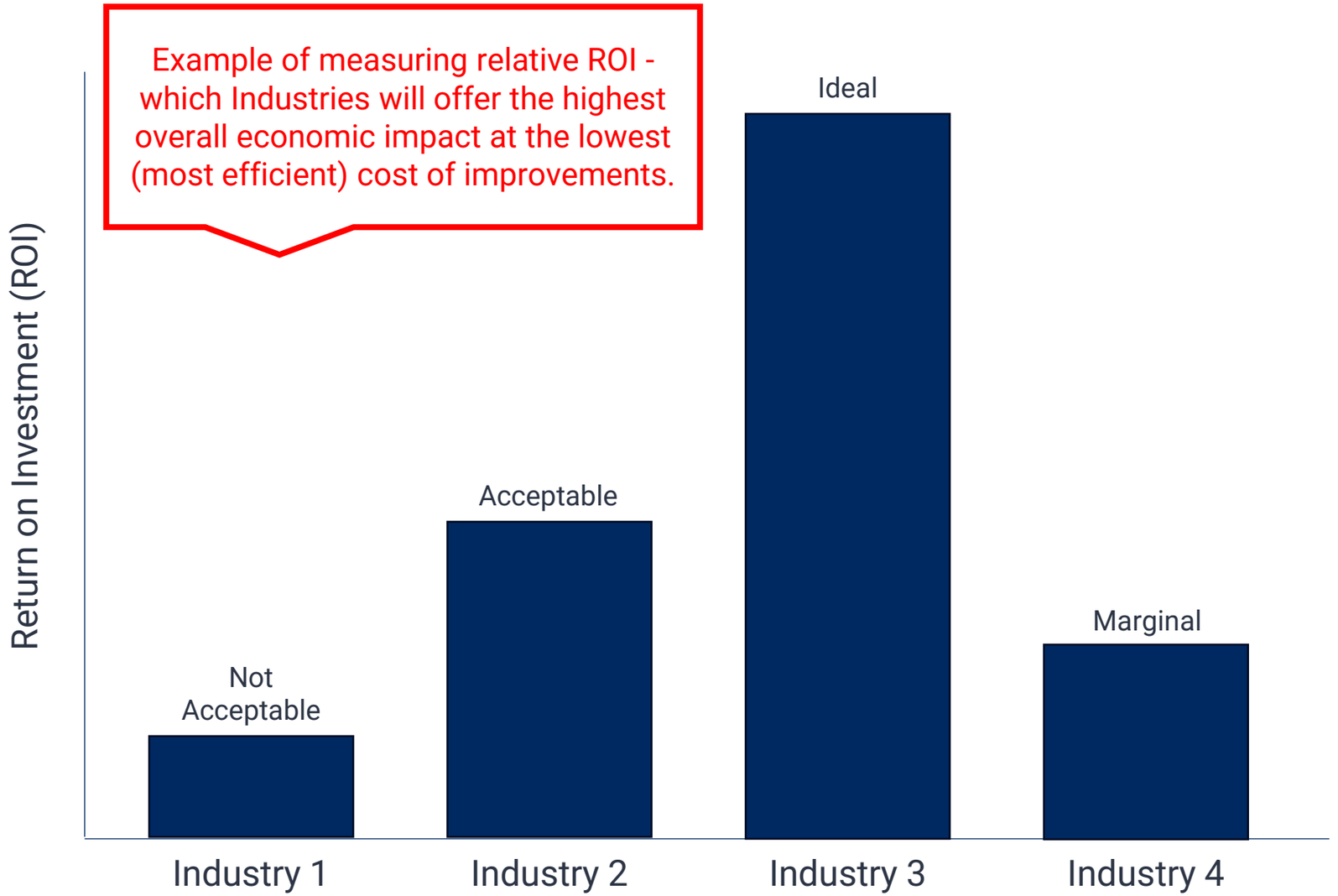
New investment must outweigh the added community costs, such as:

- **Emergency Services:** Additional emergency services (police, fire, EMS) are incrementally required as additional growth occurs. Some industrial users will require different levels of service than commercial or residential service.
- **Road Wear:** Additional traffic causes road wear. Some investment has a higher impact.
- **Water & Wastewater system improvements:** Some industrial users strain local water and wastewater capacity, and multiple high-demand users on one system may require major upgrades or new treatment facilities.
- **Housing strain:** New employees need housing, and limited supply creates short-term strain but ultimately drives new residential investment.
- **Childcare & Education strain:** More employees often correlates with more children who need childcare or schooling which requires investment in both.

Cost of not allowing investment

- **Reputational impact:** If projects are repeatedly rejected, this can develop a reputation that a community/region is not business friendly.
- **Stalled Growth:** If some growth and investment does not occur at least a the replacement rate, negative growth will eventually occur.

Economic Impact: ROI by Industry (Example)



Return on Investment by Industry

If the cost to attract an industry and the cost to support the associated growth is not outweighed by their total economic impact, then that industry will have a low or negative ROI.

This means the industry is not worth pursuing regardless of how well aligned it might be with community goals. (example: Industry 1).

Exception: If your community is stagnated or needs a boost in competitiveness to "get the economic ball rolling" it may make sense to make improvements as a "loss leader" or sunk cost.

Matching Community Goals for Industrial Development

1 Technical Site Analysis

- Size
- Developability
- Transportation/Logistics
- Utilities
- Site control
- Other Considerations

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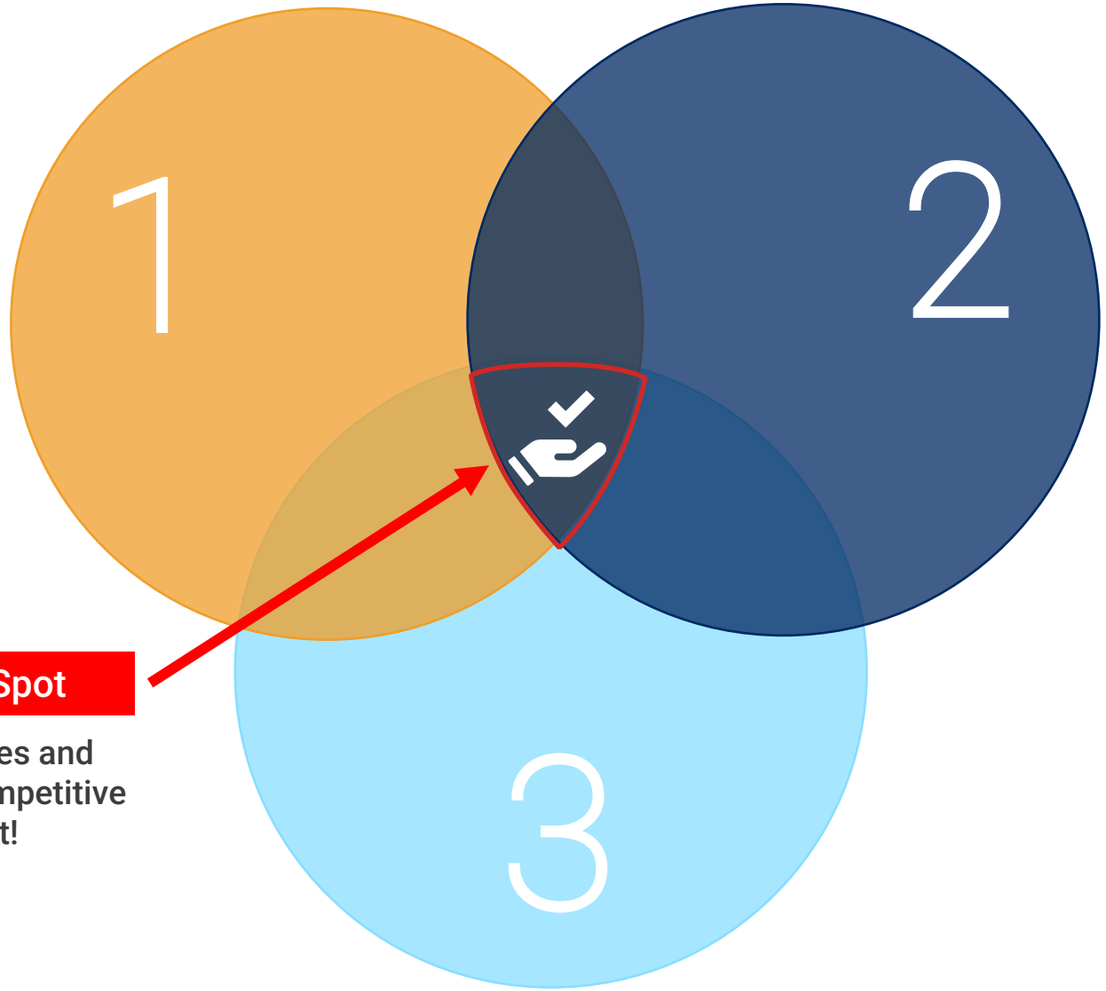

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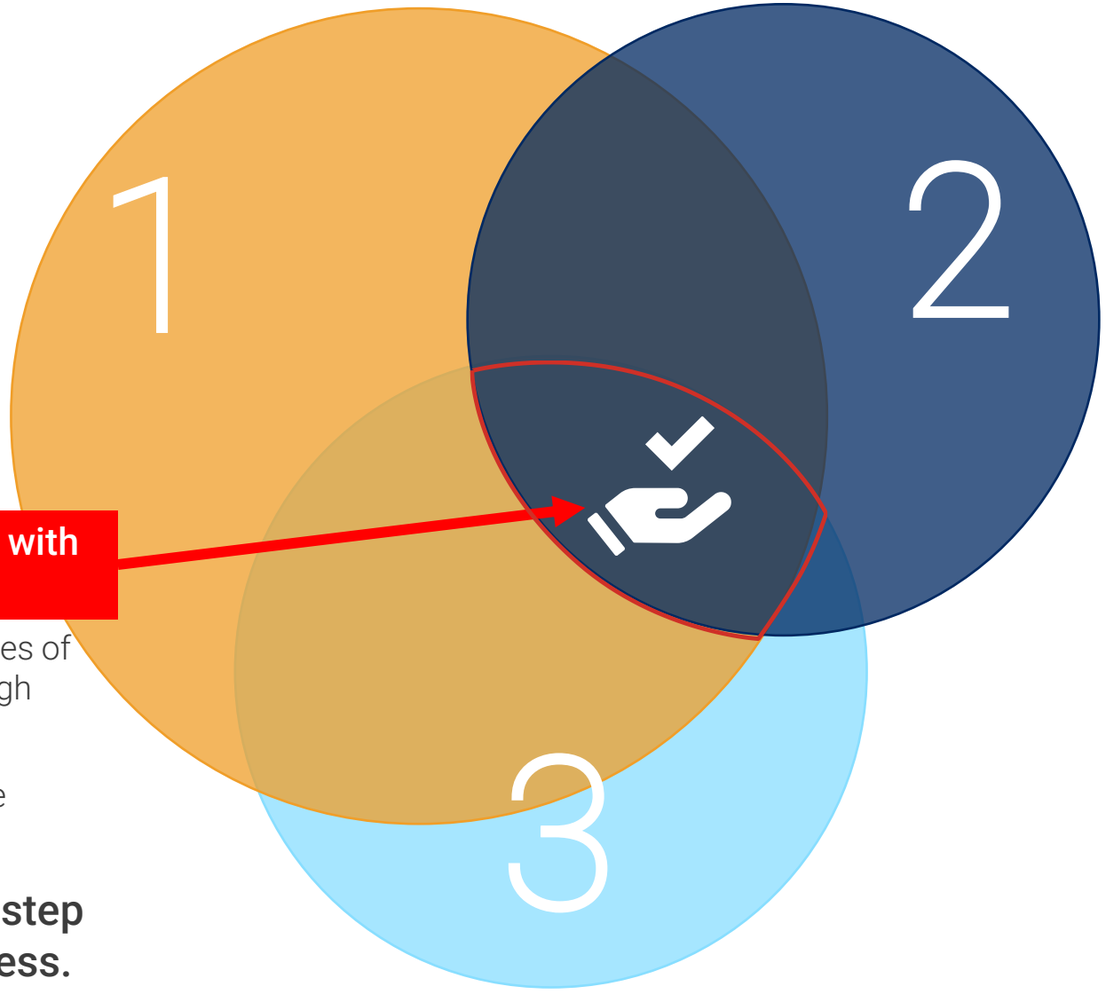

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Expanding Your Opportunities with Strategic Site Investment

You can increase the number of types of projects you can compete for through strategic site readiness!

But what does it cost to make those investments?

Site control is an essential step to increasing competitiveness.

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How to attract appropriate Industrial Investment?

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The Value of Site Control

Dirt is not a site

Benefits of Site Control

- **Define your future:** Communities can pick and choose what companies locate on the site, what it looks like, what its impact is on the community. Zoning changes, covenants and restrictions, and other regulatory instruments are generally easier to place on a site that is under control
- **Allow investment:** Having control allows for due-diligence studies and pre-permitting to be completed, clearing and grading, infrastructure to be extended, building pads to be developed, and speculative buildings to be developed. Having control also can open eligibility for grant funding.
- **Remove Risk:** The single biggest risk for corporate projects seeking certainty is land availability. Site control removes this risk. Pre-development due diligence studies and infrastructure investment also removes the risk of “the unknown” as well as cost and timeline slippage.
- **Speed up development timeline:** Sites that have completed required zoning changes, utility extensions, due diligence studies, required remediation, and other predevelopment activities generally reduce the time required to develop the site for a project.
- **Price Stability:** Protects against speculative price increases which often occur when a private seller knows a project is considering their site.
- **Confidentiality:** Site control makes it easier for communities to keep projects confidential during marketing, RFIs, site visits, and negotiations.
- **Proves community buy-in** and alignment to the marketplace

Methods of Property Control

Strong

1. Direct Ownership
   - Complete control
2. Option to Purchase
   - Requires financial consideration
   - Exclusive right to purchase the property for a period of time and allows some rights
3. Long-term land lease
4. Public Private Partnerships
   - Economic development led, developer-supported

Summary:

These options allow communities to directly control what happens on a site to varying degrees.

Moderate

1. Public Utility Ownership
   - Control depends on alignment with the utility's vision
2. Easement-based control
   - Utility and rail easements provide those easement holders the opportunity to influence site development and use.
3. Condemnation (last resort)
4. Public Private Partnerships
   - Developer-led, Economic development supported

Summary:

These options are riskier and offer less control.

Weak

1. Memorandum of Understanding (MOU)/Letters of Intent (LOI)
   - Not considered control by most companies or site selectors
2. Right of First Refusal
   - No control. No guarantee of availability.
3. Zoning and Planning-Based Control
   - Limited control. No guarantee of availability.
4. Covenants & Restrictions
   - Limited control. No guarantee of availability.

Summary:

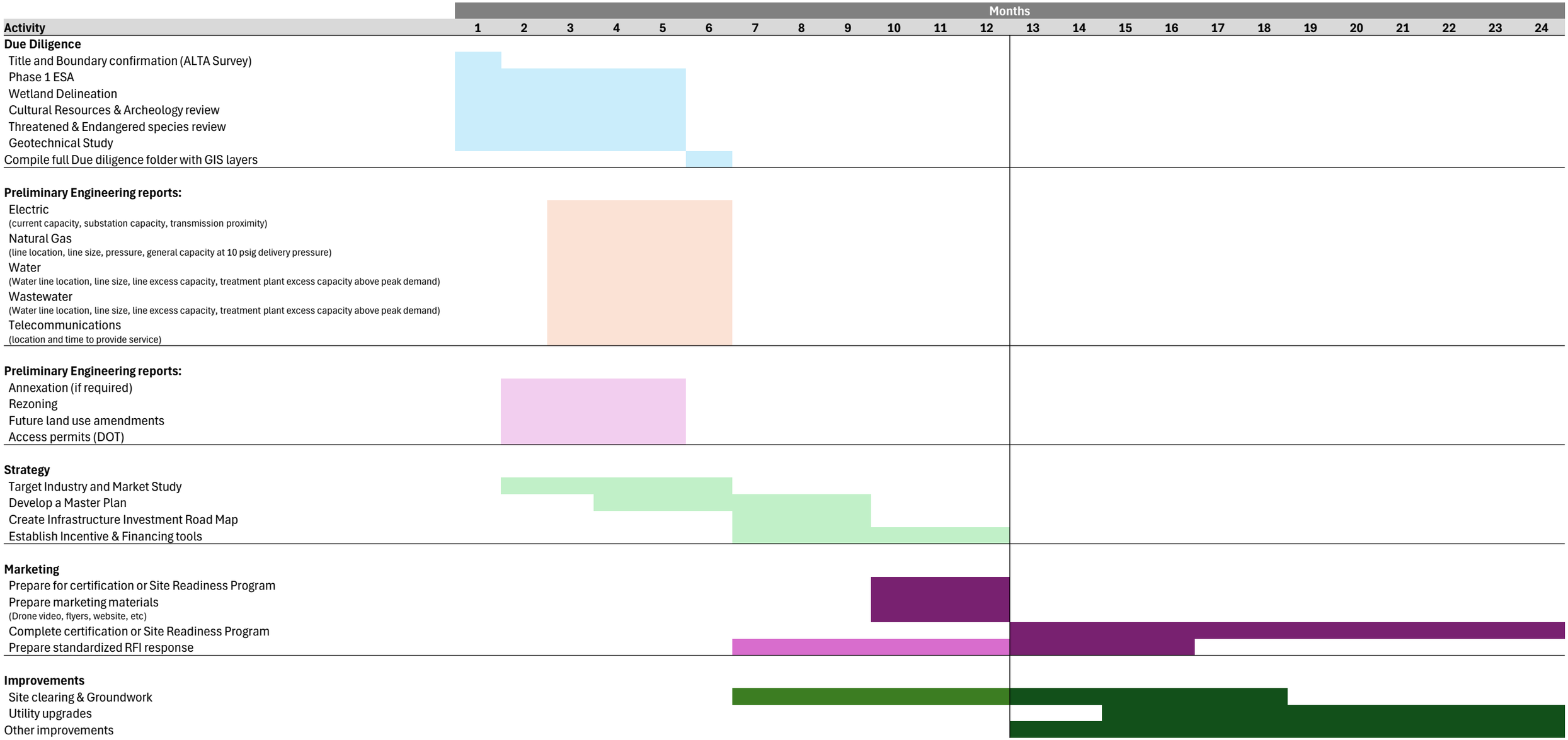
These options offer even less control or are not recognized as offering any assurance to a corporate project or site selector.

Impact of Site Control vs Regulation

	Private Investment Low Regulation		Private Investment High Regulation		Private Investment Public Site Control	
	Primary Market	Tertiary Market	Primary Market	Tertiary Market	Primary Market	Tertiary Market
Typical Project Sizes	Small - Very Large	Small - Medium	Small - Large	Very Small - Medium	Small - Very Large	Small - Very Large
Speed to Market	Very Fast	Fast	Moderate	Slow	Fast	Fast
Level of Activity	Very High	Moderate	Moderate - High	Low	Very High	Moderate - High
Typical Project Type	Distribution	Distribution	Distribution	Distribution, Start ups, Family Businesses	Strategic	Strategic
Private Investment Interest	Strong	Moderate	Moderate - Strong	Low	Very Strong	Strong

Takeaway:
Regulation slows and restricts private investment, while public control preserves flexibility, speed, and keeps sites attractive across markets.

What to do after you control a site



SITE SELECTION GROUP

Note: The Gantt Chart above is generalized and not site specific. Generally, it should be emphasized that understanding the site and developing a plan should be the initial focus, followed by marketing, investments, and site readiness/certification efforts. Also, it may be beneficial or required to complete some of the tasks from month 1-6 prior to purchasing a property.

Strategic Long-term Plan

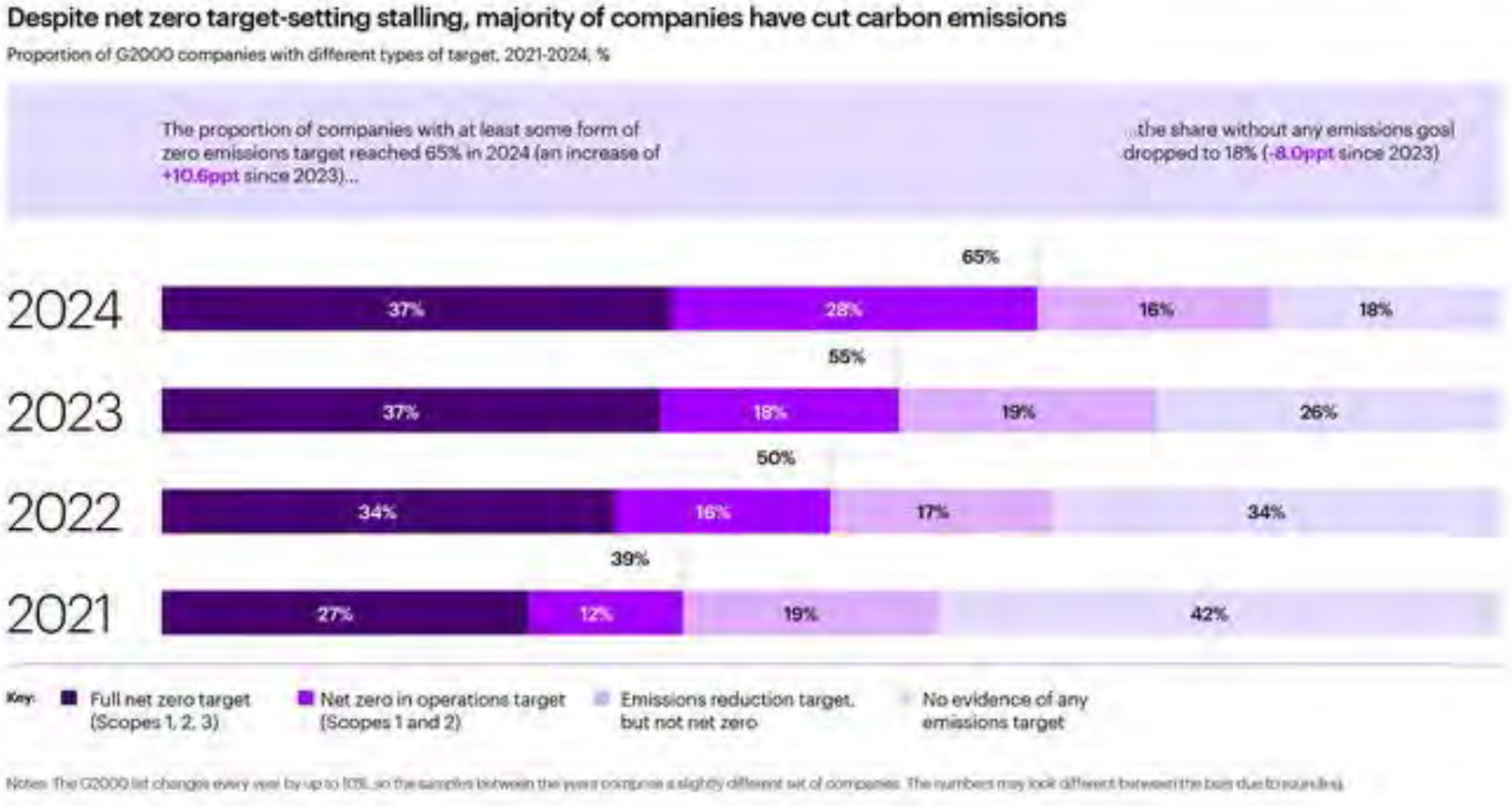
Methods

- **Long-term Economic Development Strategy:** Defining and committing to a long-term strategy is important in developing or repositioning a community's reputation.
  - *Example*: Research Triangle Park > RTP region
  - Requirements:
    - Define your goals and stick with them. Develop to meet those goals. Adjust branding and workforce programs to align with those goals.
    - Sample goals: Focus on a particular industry cluster, diversify, focus on a particular strength (e.g. water availability or workforce.

- **Strategic Outreach:** Placing your product and community on a website or setting up an email campaign is not sufficient to cut through the noise.
  - Determine who your target audience is and either directly reach out to them or make sure you are in their path. This can be a mix of virtual and in-person.
  - *Examples*:
    - Identify site selectors, developers, & brokers who focus on your target industries then focus efforts on them.
    - Identify ways to interface with your target industries – industry conferences, marketing tours, thought leadership materials, etc.

Industry Trends

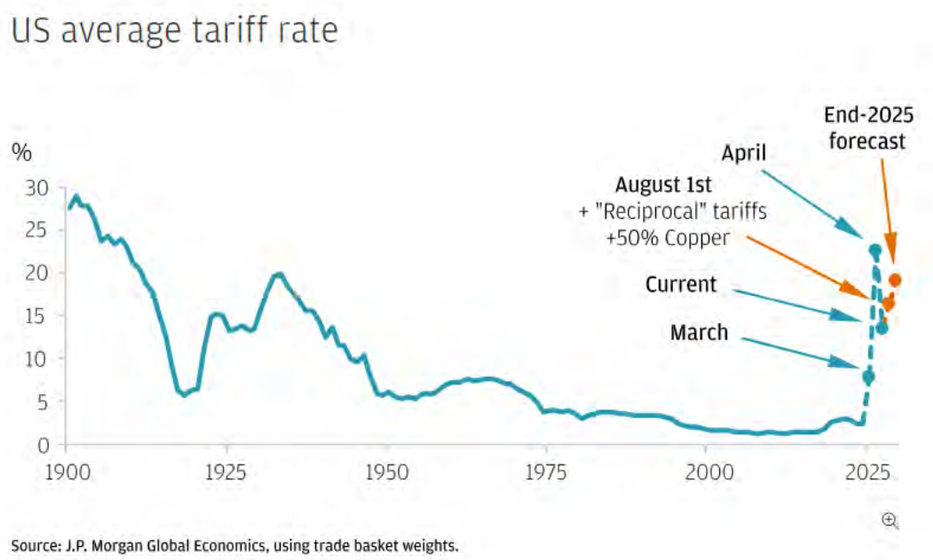
Corporate Sustainability

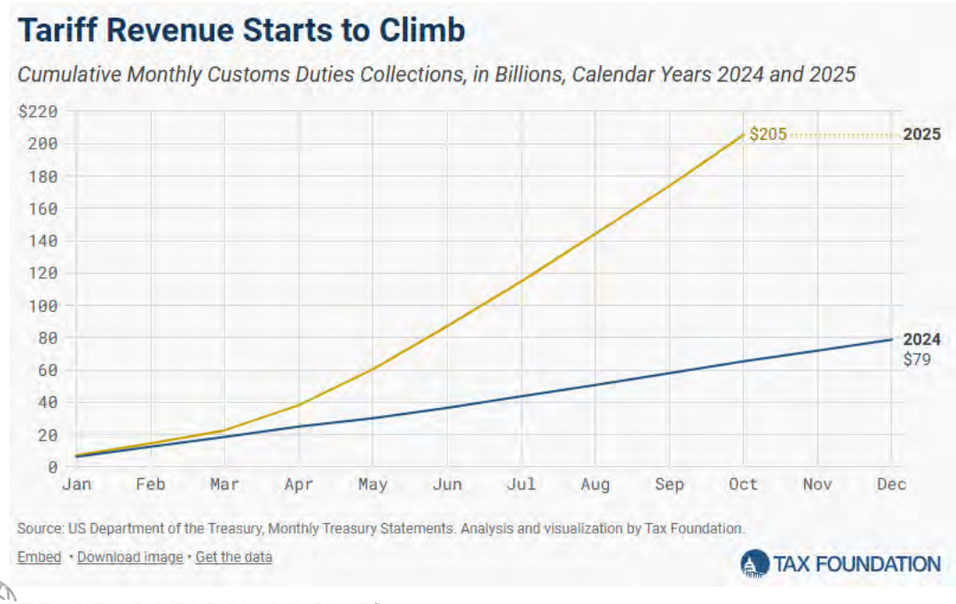


Notes: The G2000 list changes every year by up to 10%, so the samples between the years comprise a slightly different set of companies. The numbers may look different between the bars due to rounding.

- Only 16% of the world's 2,000 largest companies are on track to meet their net-zero targets (Accenture 2024)
- Have the goals been sidelined?

Tariffs





	Long-Run GDP	Capital Stock	Pre-Tax Wages	Hours Worked Converted to Full-Time Equivalent Jobs
Section 232 Tariffs	**-0.2%**	**-0.1%**	**0.0%**	**-159,000**
Section 232 Steel and Aluminum	Less than -0.05%	Less than -0.05%	0.0%	-27,000
Section 232 Autos and Auto Parts	-0.1%	-0.1%	0.0%	-103,000
Section 232 Furniture, Kithcen Cabinets and Vanities, Lumber	Less than -0.05%	Less than -0.05%	0.0%	-3,000
Section 232 Heavy Trucks and Parts	Less than -0.05%	Less than -0.05%	0.0%	-23,000
IEEPA Tariffs, Total	**-0.4%**	**-0.3%**	**0.0%**	**-344,000**
Increases (ROW)	-0.05%	-0.05%		

Estimates forecast a reduction in jobs and higher cost for goods.

BUT… The story is still being written. The biggest unknown is whether these stick around in the next administration.

Data Centers: Rising Demand

Estimates are even higher now!

- In 2023, Data Centers Electric consumption was 4.4% of the USA total consumption. By 2028, this will be between 6.7 and 12%.
- In 2024, data center electric demand was projected to grow by roughly 10% per year.
- **Availability:** Growing demand is prioritizing new capacity over all other considerations:
  - Quick fix: Coal and natural gas generation
  - Regulated utilities cannot grow quickly enough leading to.
    - Interest in private generation
    - Small Modular Reactors (SMRs)
    - Microgrids/CHP systems
- **Cost:** Low rates attract projects and stress system capacity. Renewable goals on the back burner for companies. Renewable credits are too expensive for most
- **Reliability:** Baseload generation is necessary for data centers and most industry demand. Intermittent generation cannot support these uses well without risking blackouts for residential and commercial customers

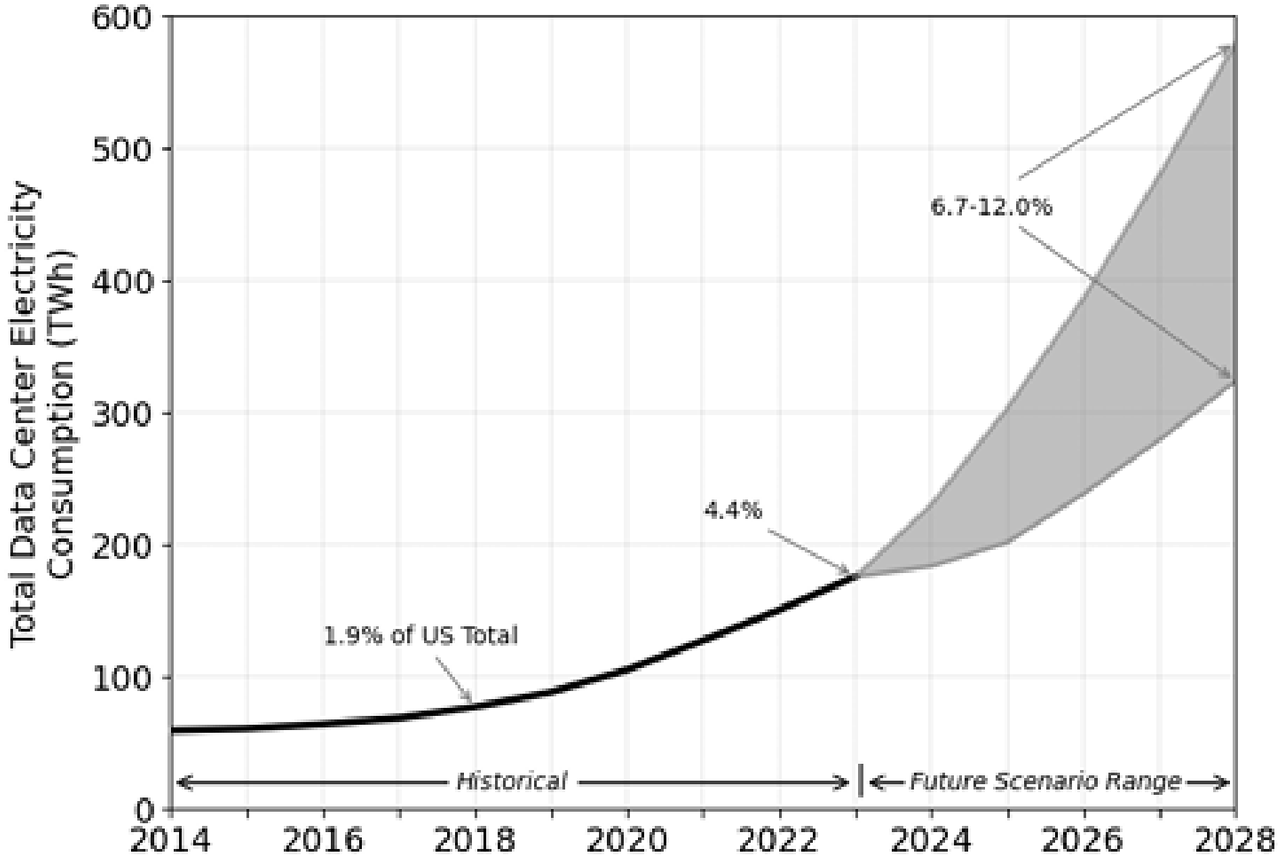
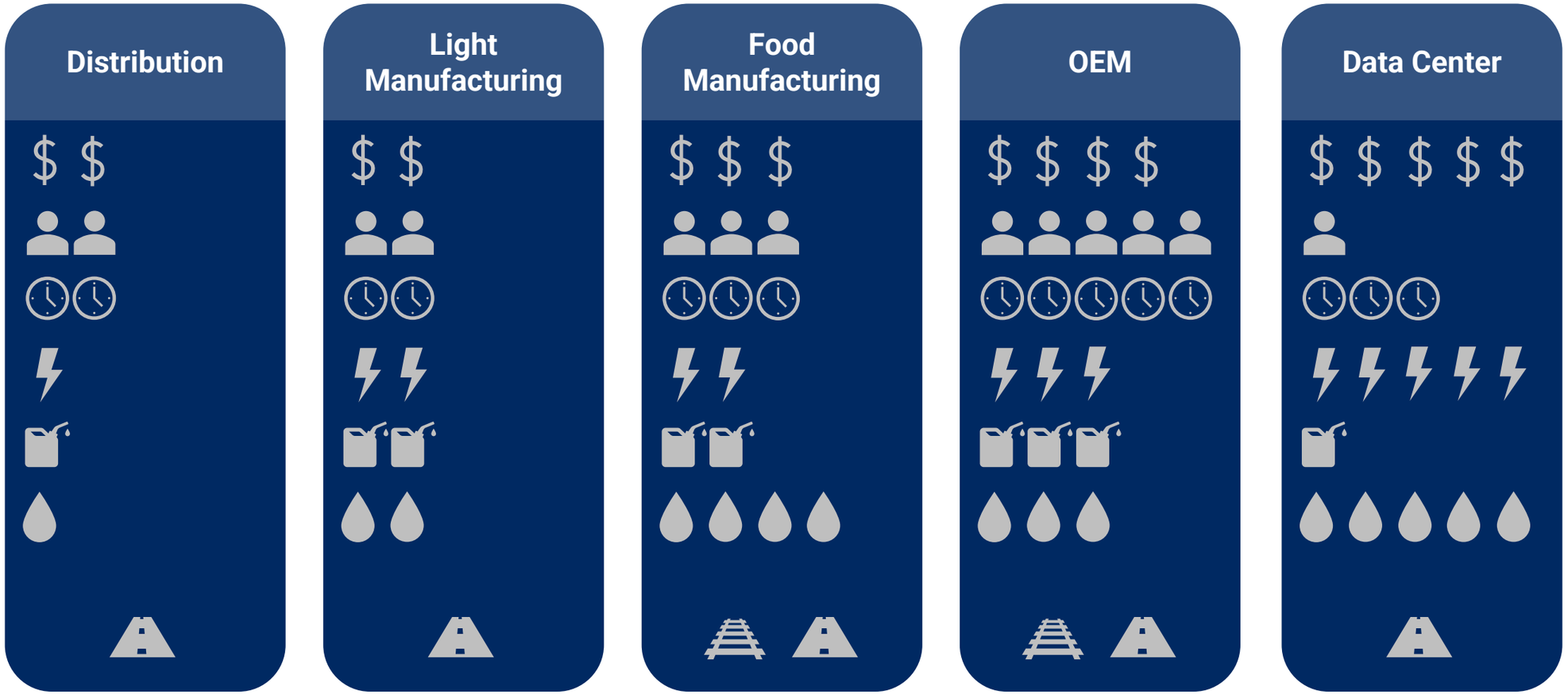


Figure ES-1. Total U.S. data center electricity use from 2014 through 2028.

Source: 2024 United States Data Center Energy Usage Report, December 2024, Berkeley Lab – Sponsored by the DOE Office of Energy Efficiency ad Renewable Energy

Energy Demands by Project Type

Priority: Availability > Cost > Reliability > Renewables



Energy Sensitivities	Distribution	Light Manufacturing	Food Manufacturing	OEM	Data Center
	Quick Low Demand	Quick Low Operating Cost Moderate demand	Ability to get significant water and wastewater	Redundancy & High Reliability High Demand	Redundancy & High Reliability Massive Demand

Strategic Workforce Training

- **Problems:**
- Need for workers
  - US deficit of 6M workers by 2030 (Bloomberg)
  - Manufacturing: ~3.8M hires by 2033 (Deloitte)
    - ~1.9M may go unfilled without better pipelines
    - 65% of execs cite talent as the #1 challenge.

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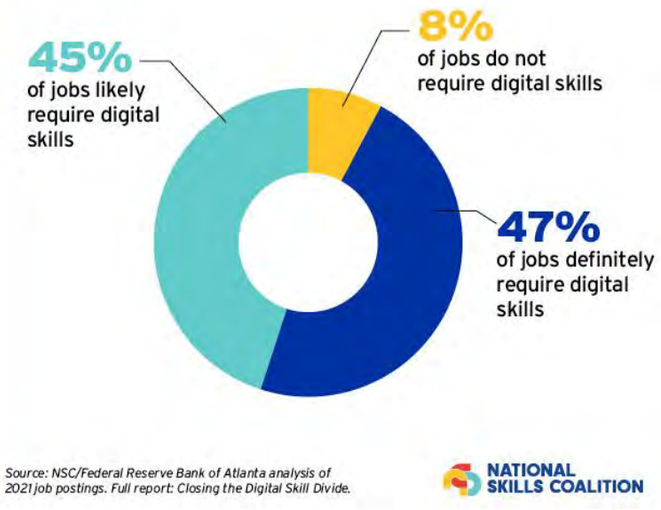
- Most Jobs Require Digital Skills
- Upskilling is becoming essential
  - Training is not just for those entering the job market.
    - 64% of workers who switched jobs from 2022 – 2024 changed careers (Indeed.com)



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- Most Jobs Require Digital Skills
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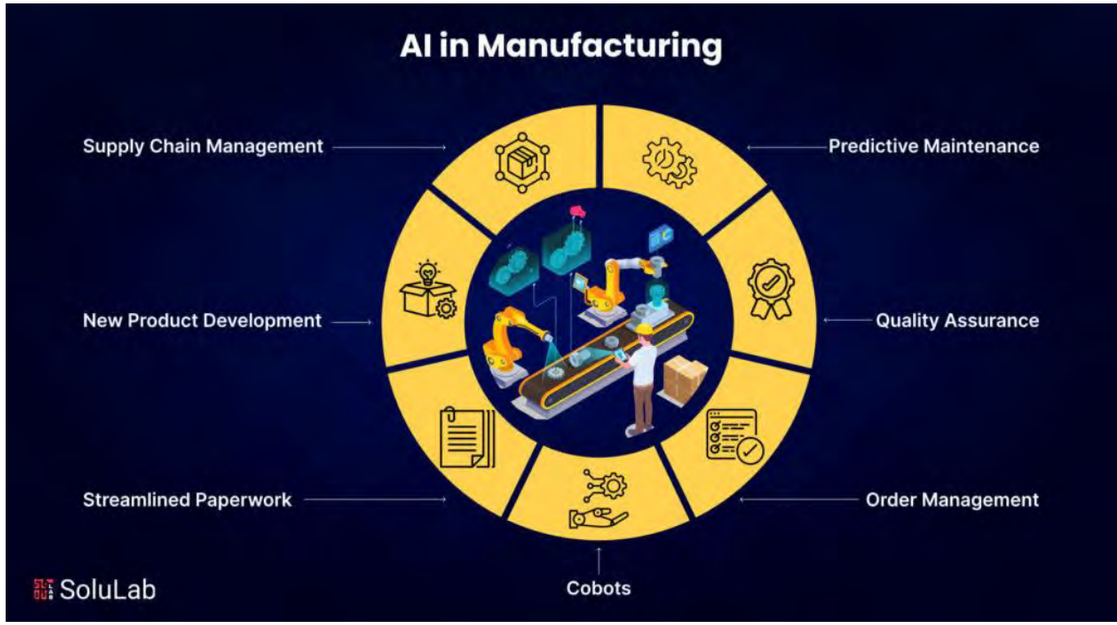
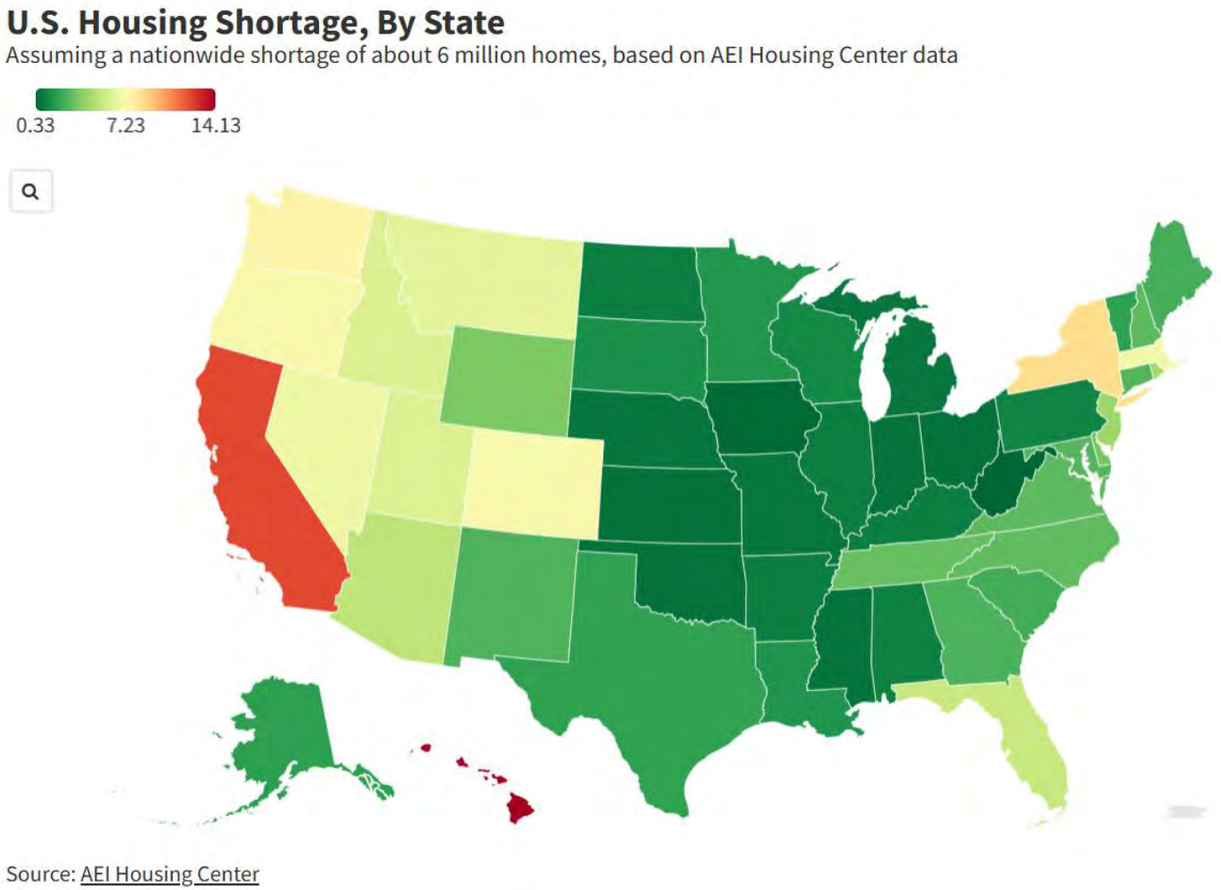
- Technology is rapidly changing and being adopted by diverse industries.



Housing Availability & Affordability

- **Problems:**
- 4.5 million home shortage in USA
  (US Chamber)



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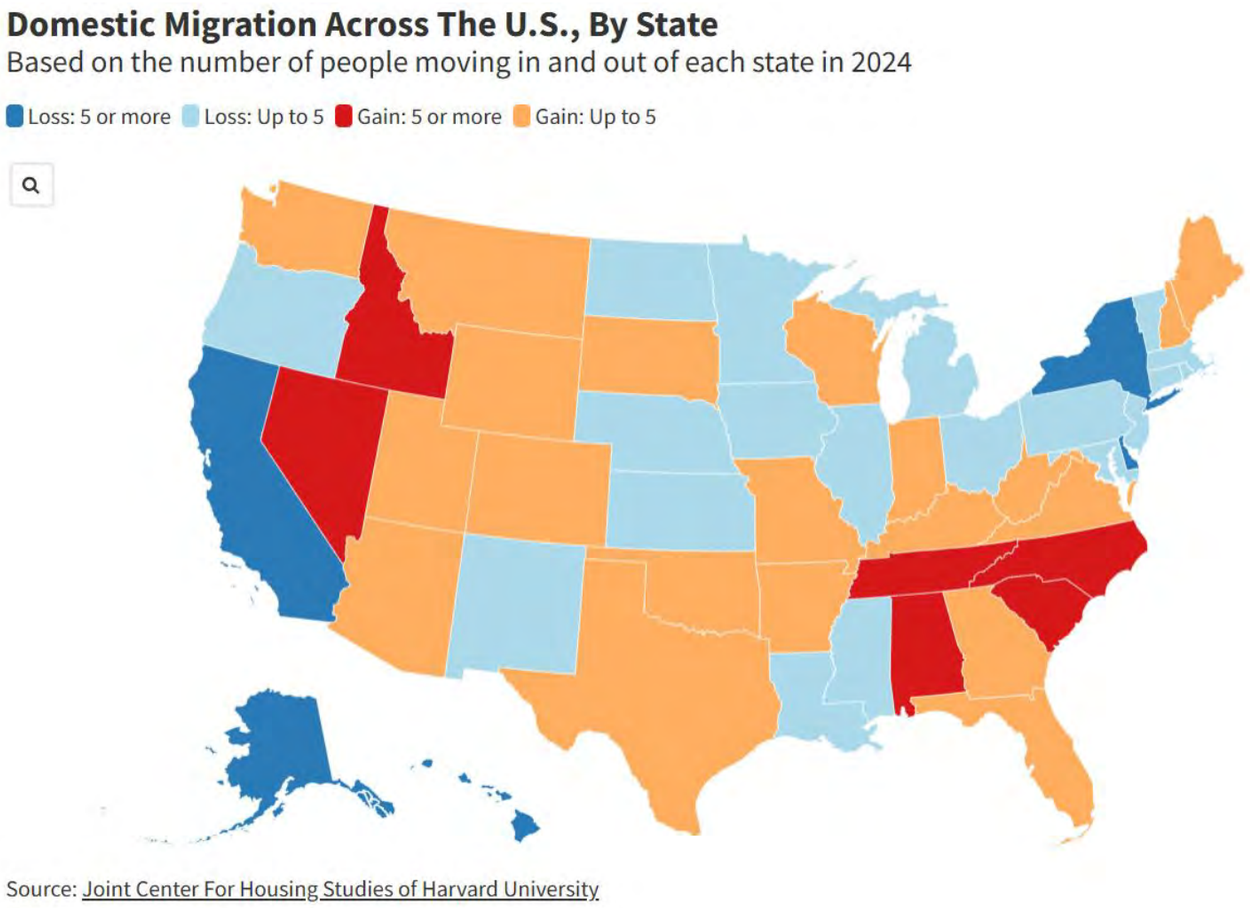

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- Domestic migration shuffles the problem
- Many people cannot afford housing
  - Mortgage rates, reluctant sellers, and slow construction

Sources: U.S. Bank Asset Management Group Research, Bloomberg, January 31, 1999-May 31, 2025.

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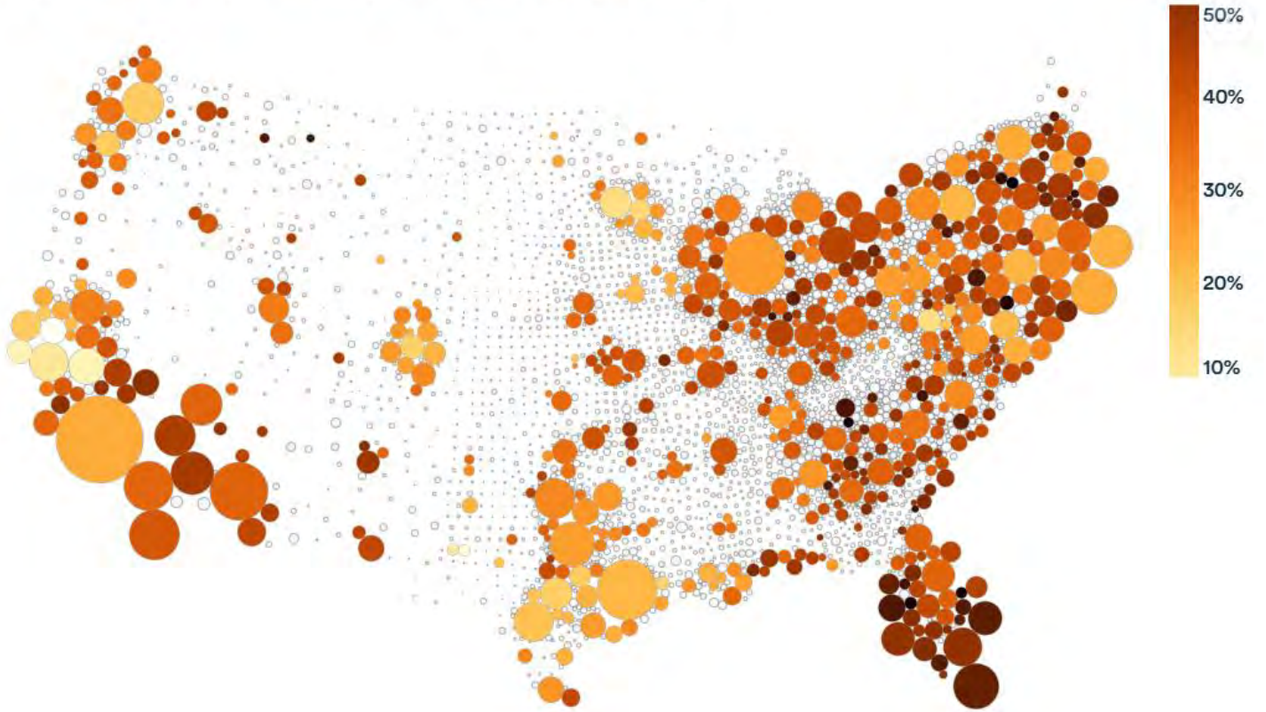
- Domestic migration shuffles the problem
- Many people cannot afford housing
  - Mortgage rates, reluctant sellers, and slow construction
  - Rent has increased 10-60% since 2020 in many desirable areas and areas with housing shortages (Zillow)

Figure 4: Five-year changes in ZORI, by county



Source: Zillow (most recent data: February 2025)

Industry Announcement Summary

Industry Cluster	Key Recent Project Announcement Data			
	Count of Announced Projects (US)	*Avg. Jobs Per Announcement (US)*	*Avg. Industry Wage (US)*	*Avg. Capex Per Announcement (US)*
Biopharma/Life Science	*286*	*160*	*$63.48*	*$187 m*
Battery	*30*	*295*	*$44.44*	*$273 m*
Food & Beverage	*643*	*86*	*$34.83*	*$54 m*
Automotive	*431*	*135*	*$37.16*	*$77 m*
Logistics	*949*	*93*	*$37.95*	*$42 m*
Electronics	*651*	*222*	*$64.42*	*$351 m*
Chemicals	*363*	*95*	*$55.71*	*$368 m*
Aerospace	*247*	*134*	*$53.81*	*$40 m*
Metals & Plastics	*897*	*91*	*$36.39*	*$73 m*
Medical Device	*212*	*116*	*$52.80*	*$31 m*
Machinery	*577*	*95*	*$38.22*	*$30 m*
Building Materials	*544*	*82*	*$33.25*	*$36 m*
Paper	*103*	*71*	*$41.35*	*$79 m*

Key takeaways

1. Decide what your community wants and plan for it with real public input.

2. If industrial growth is the goal, secure site control first.

3. Prepare the site and community so you can compete when opportunities come.