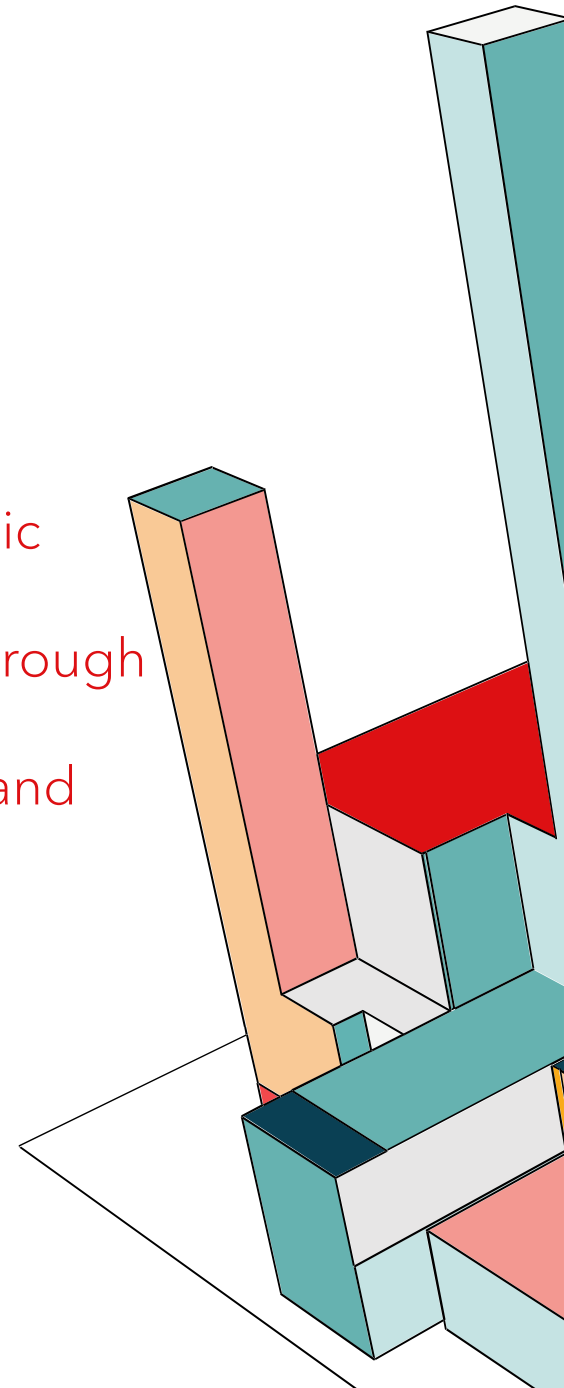


COMMUNITY COORDINATION OF SHARED WATER & SEWER INFRASTRUCTURE

AGENDA

- Infrastructure Asset Management
- Infrastructure as Economic Development
- Michigan's Report Card
- The Problem with Annexation
- Legal Alternatives to Annexation
- Case Study of Northwest Lower Michigan

Thesis: Infrastructure expansion is an economic development tool, most feasibly implemented through negotiated agreements between cities, villages and townships.



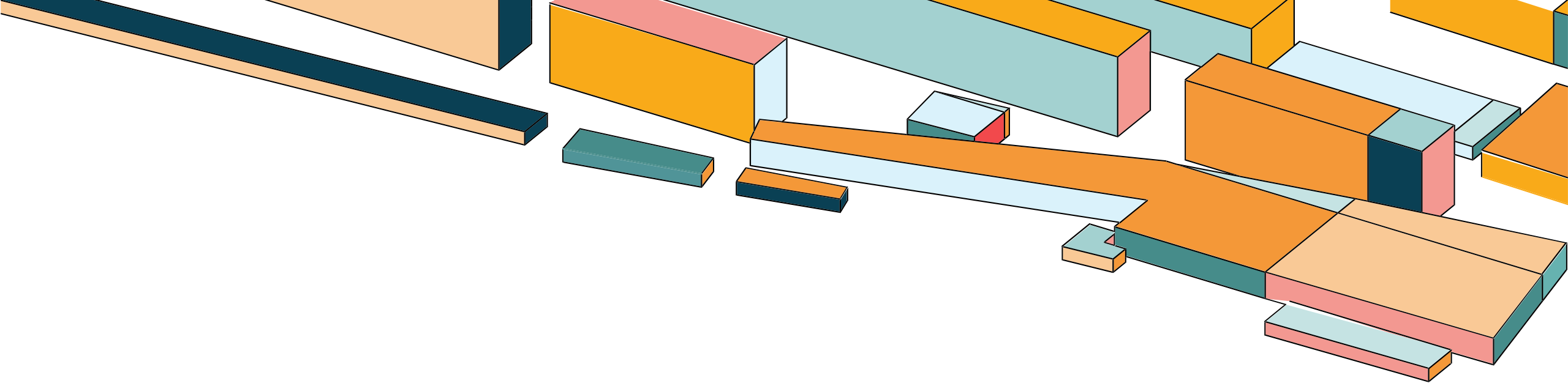
**WHERE IS
UNDERGROUND
INFRASTRUCTURE
IN THE
COMMUNITY
DEVELOPMENT
PLANNING
PROCESS?**





WHAT WE FREQUENTLY HEAR FROM CITIZENS

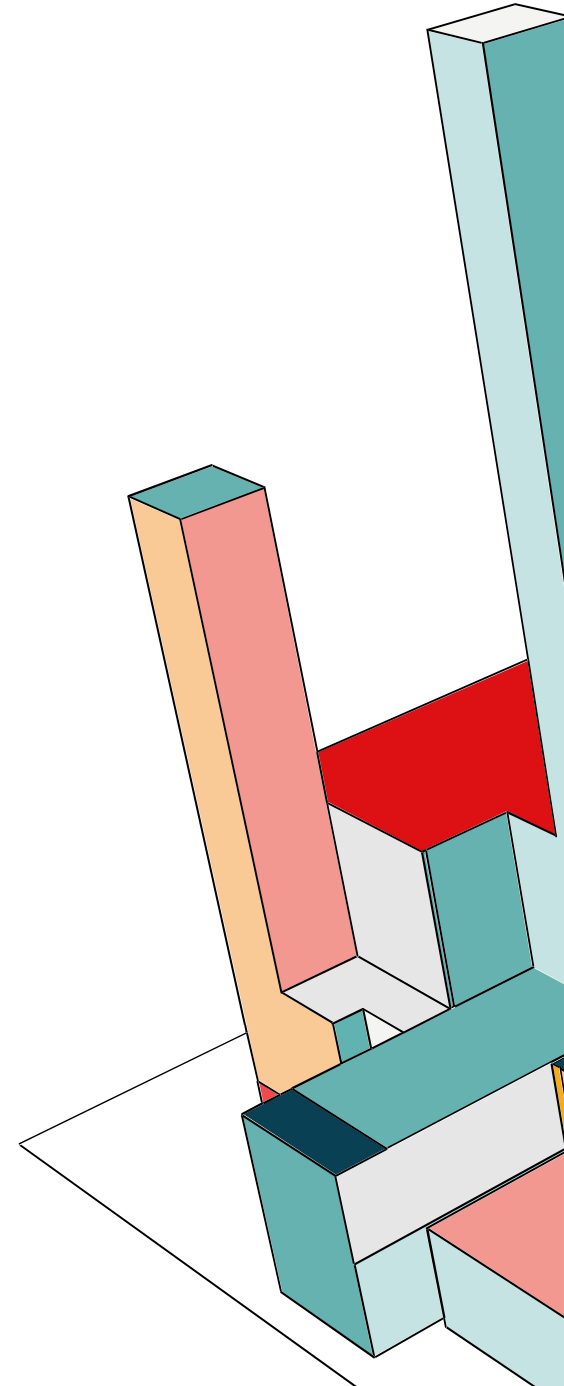
- More housing
- More small businesses
- More consistent public transportation
- Farm and forest land preservation
- Improved public spaces
- Traffic calming downtown



**WHY DON'T WE EVER HEAR ABOUT
WATER & SEWER?**

PLANNING FOR, NOT REACTING TO, INFRASTRUCTURE NEEDS

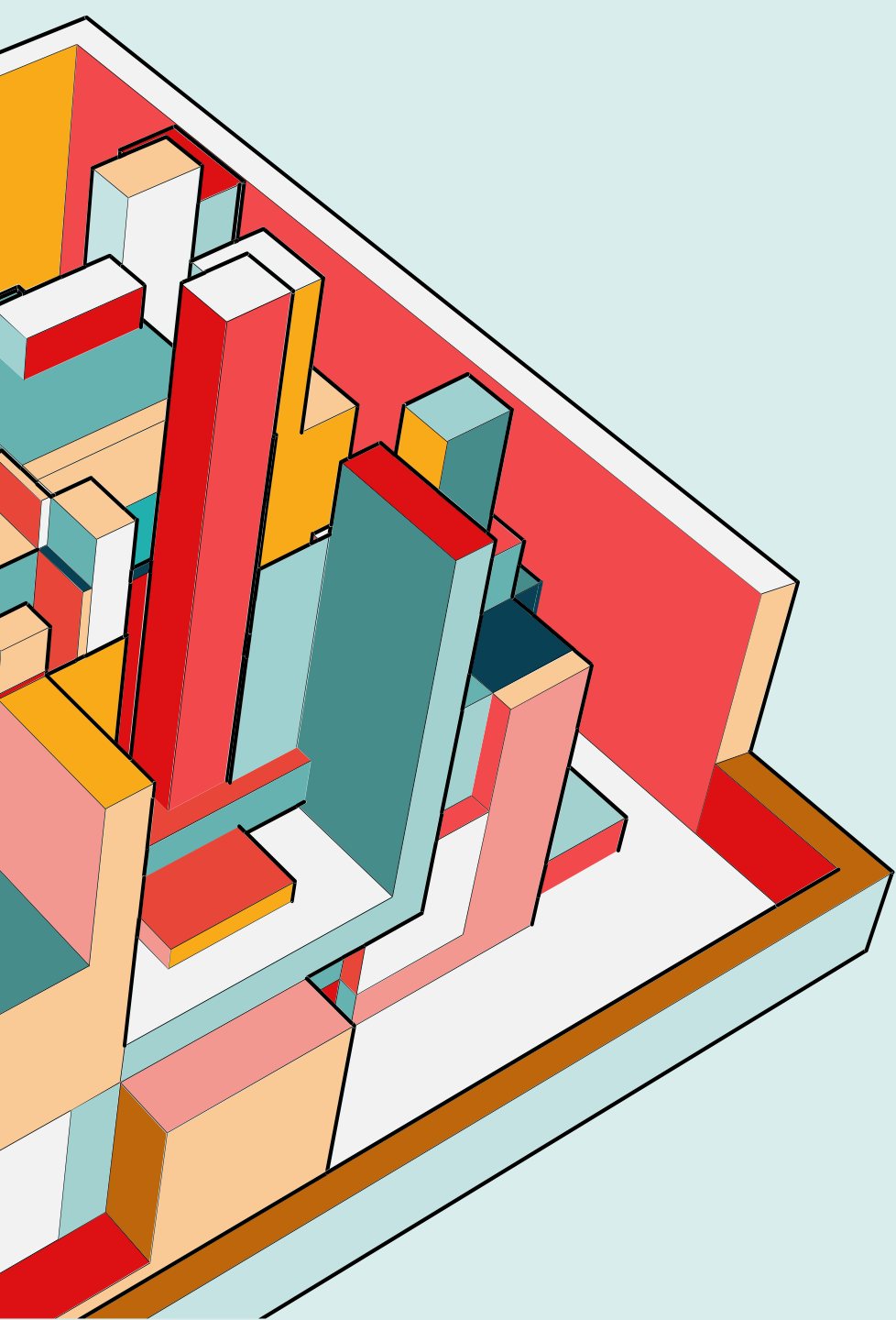
- 3 generations of IAM as a conceptual framework
 - 1st gen. (1990's – 2005) – Recognition that incremental maintenance is **more cost effective** than reactivity after a failure
 - Pushed heavily by federal government to ensure local investments were being **effectively managed**
 - 2nd gen. – (2005 – 2010) – **Risk management** introduced as a result of **better technology** aids
 - 3rd gen. (2010 – present) – Understand infrastructure from various societal perspectives: **environmental, economic, social**



WHAT PROMPTED THE IAM CONCEPT IN THE 1990'S?

- Recognition that infrastructure nationwide was aging
- Technological advancements
- Constrained local budgets - needed to do more with less
- Federal regulations - EPA - "sticks"
- Federal funding required it - "carrots"





INCREASES IN TECHNOLOGY MEAN HIGHER EXPERTISE NEEDED

- In the past two decades, the expectation is that infrastructure will be managed proactively
- Infrastructure costs, needs and expansions must become a larger part of local strategies

INFRASTRUCTURE AS ECONOMIC DEVELOPMENT

Hint: It's not just a depreciating asset.

Fact: The effects of infrastructure on economic development were also prompted by federal investment in local systems.



WHAT'S IN THE LITERATURE? DOES INFRASTRUCTURE EQUAL BETTER ECONOMIES?



- Note: There are very few studies measuring a correlation since the 2000's.
- More recent literature focuses on national, **not local**, geography.
- Faqir S. Bagi (2002) finds that water & sewer expansion contributes to **direct and indirect economic growth**.
- **You get more of what you have** – rule of thumb.
- Results are exponential in **urban areas**.

LITERATURE CONT.

Janeski & Whitacre (2014) – Studied Oklahoma 1990 to 2000. Only **significant impact on home values**.

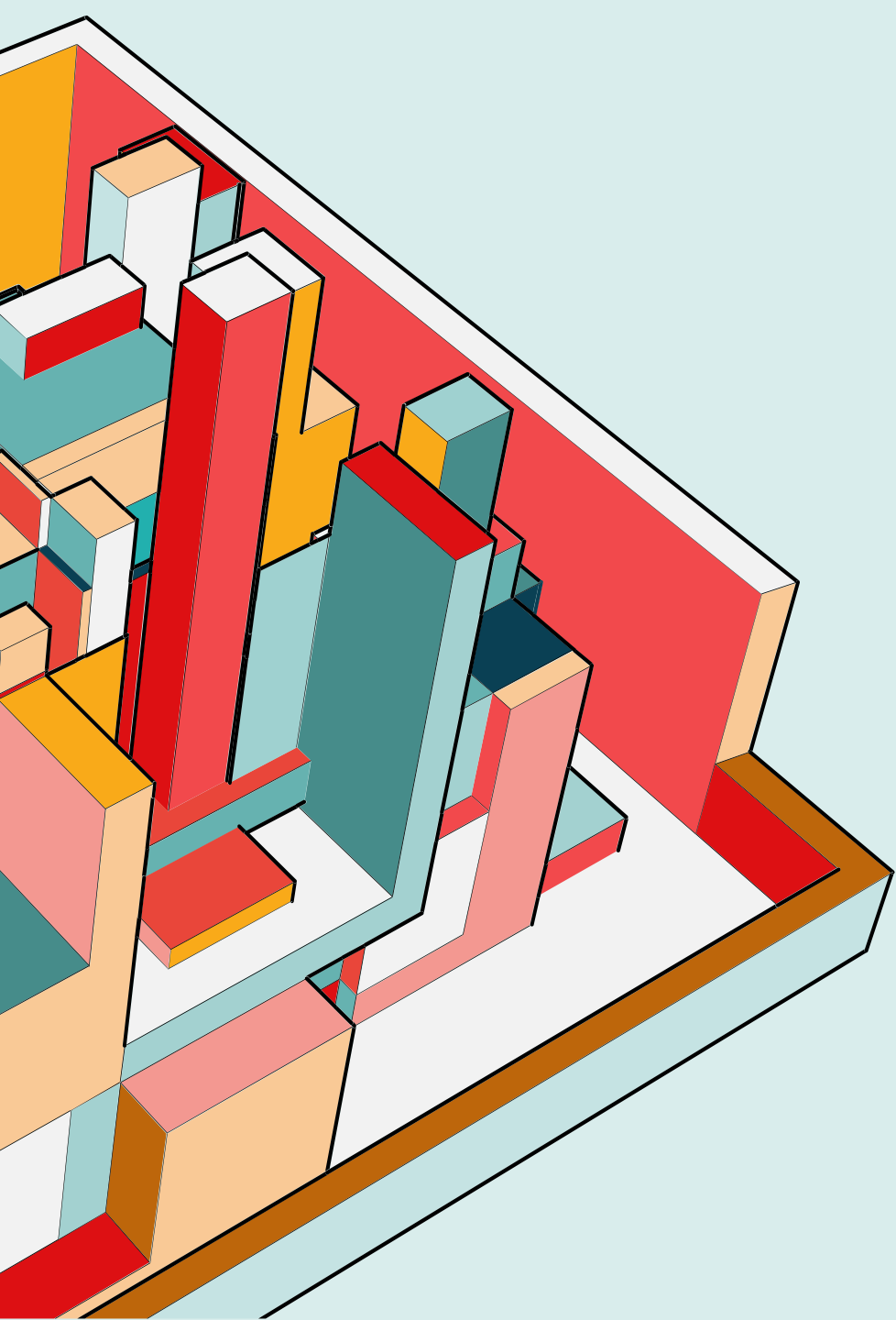
Two Urban Land Institute reports by Marx et al. – calls out need for **collaboration**, the **high cost of failures**, and lacking infrastructure can **deter investment**.

Jin Jun et al. (2019) – The highest costs from an infrastructure failure are from **loss of public trust**.



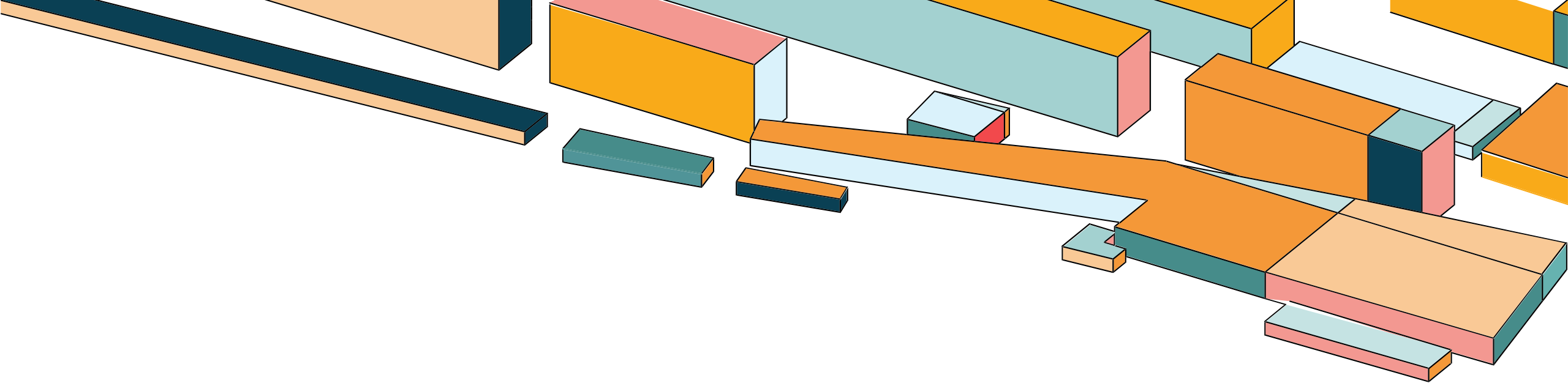
IN-DEPTH – BAGI (2002) STUDY

*"Water/sewer projects can save and/or create jobs, spur private sector investment, attract government funds, and enlarge the property tax base. The 87 water/sewer projects studied, on average, **created 16 full-time-equivalent construction jobs**. Direct beneficiaries (businesses) saved, on average, 212 permanent jobs, created 402 new permanent jobs, made **private investments of \$17.8 million**, leveraged **\$2.1 million of public funds**, and added **\$17.0 million to the local property tax base**. Indirect beneficiaries saved, on average, 31 permanent jobs, created 172 new permanent jobs, **attracted \$3.34 million in private-sector investment**, leveraged \$905,000 of public funds, and **added \$3.0 million to the local property tax base**. This enlarged property tax base, at a mere 1-percent tax rate, would yield **\$200,000 in annual property tax to the community**."*



INFRASTRUCTURE EXPANSION CAN SEEM TOO COSTLY AT FIRST

But the economic development benefits (jobs and tax base) will exceed the costs over time.



CURRENT STATE OF MICHIGAN'S WATER & SEWER INFRASTRUCTURE



ACCORDING TO THE MICHIGAN CHAPTER OF THE AMERICAN SOCIETY OF CERTIFIED ENGINEERS (ASCE)...

Michigan's drinking water score - D+

Michigan's storm water score - D

Michigan's wastewater score - C



DRINKING WATER IN MICHIGAN

- According to ASCE
 - Most systems over 50 years old
 - State has \$860 million to \$1.1 billion annual gap in maintenance costs – deferred maintenance and lack of knowledge of conditions
 - Need more sustainable funding sources
 - Regulatory advancements have helped spur upgrades and IAM



STORM & WASTEWATER IN MICHIGAN

- Upgrades needed for **increased storminess**
 - *"The amount of precipitation failing in the heaviest 1% of storms has increased by 35% since 1951" (ASCE)*
- Health and **environmental concerns** when system can't handle input
- ASCE reiterates that **unclear ownership** and maintenance of systems is an issue
- **Private septic** without local oversight

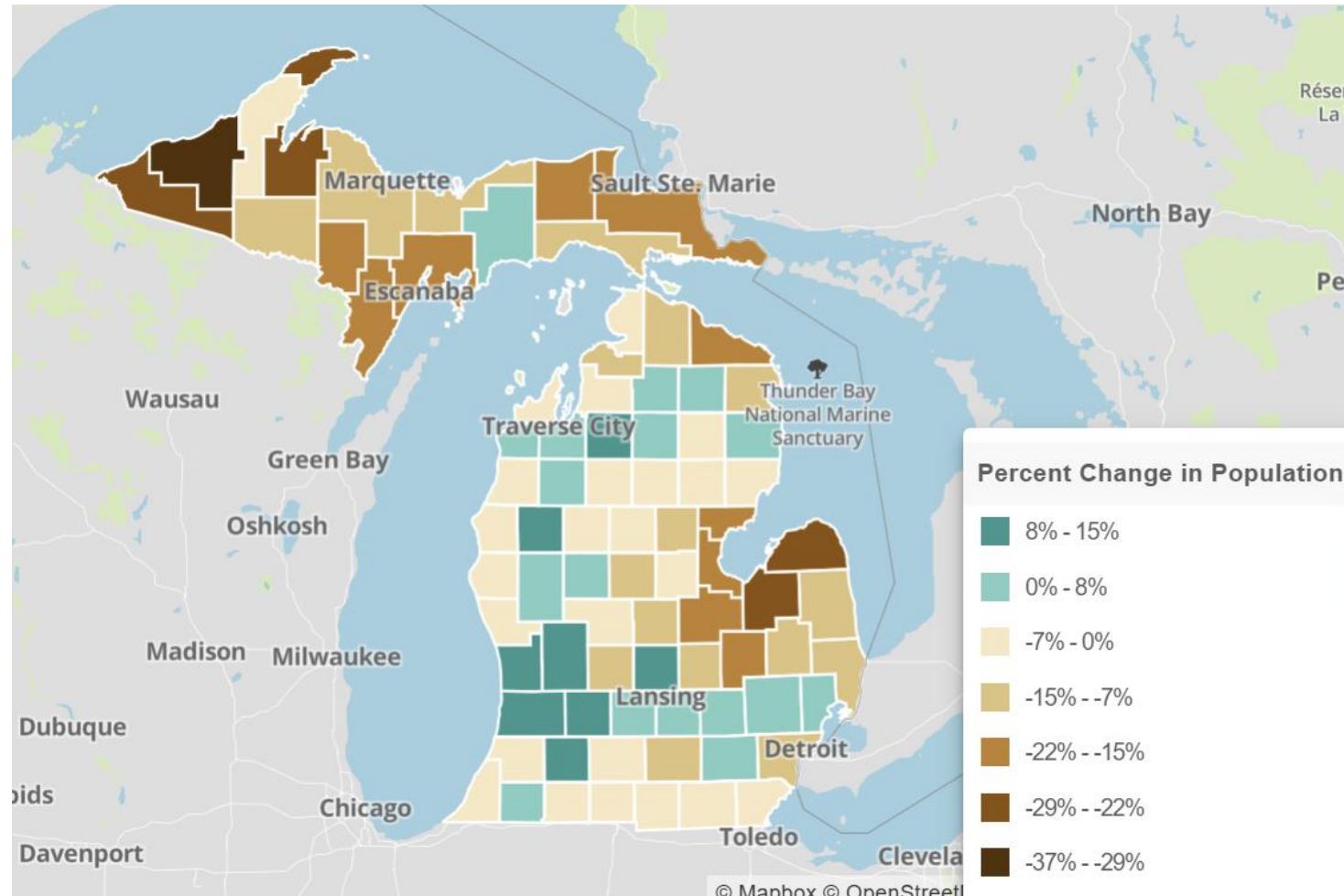


MIGRATION PATTERNS STRAINING SYSTEMS STATEWIDE

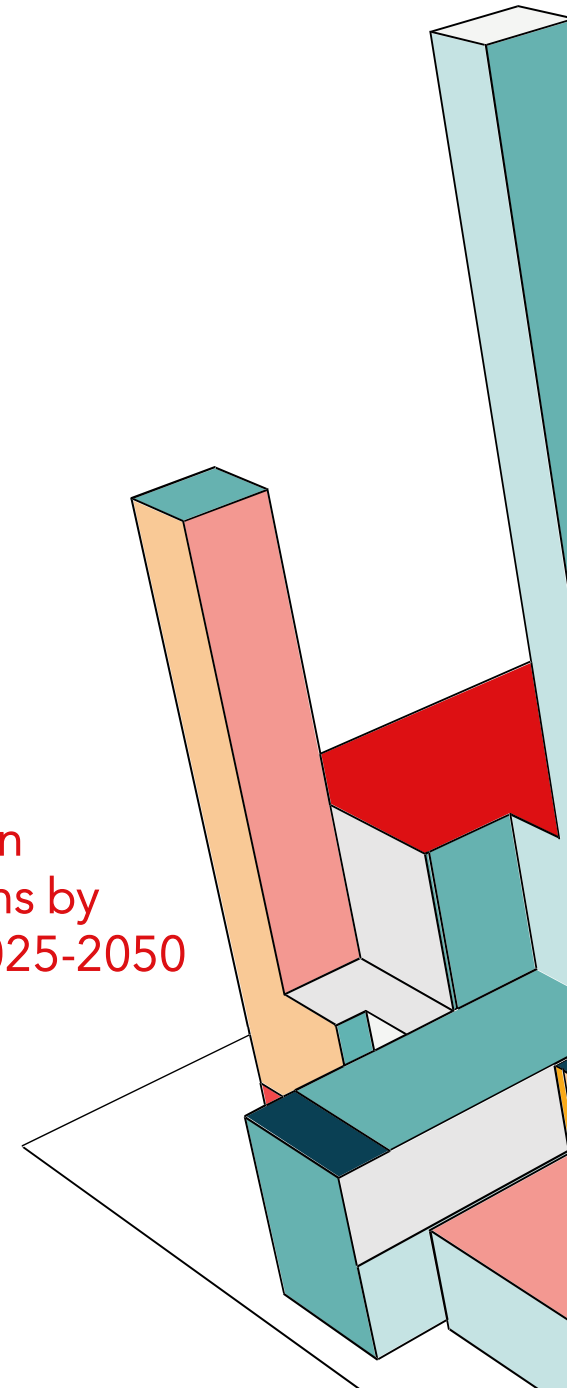
- Populations have shifted to metro Detroit, metro Grand Rapids and Grand Traverse County
- This means...
 - Previously undeveloped areas need new infrastructure expansions
 - Communities losing population have less tax base to fund already aging systems

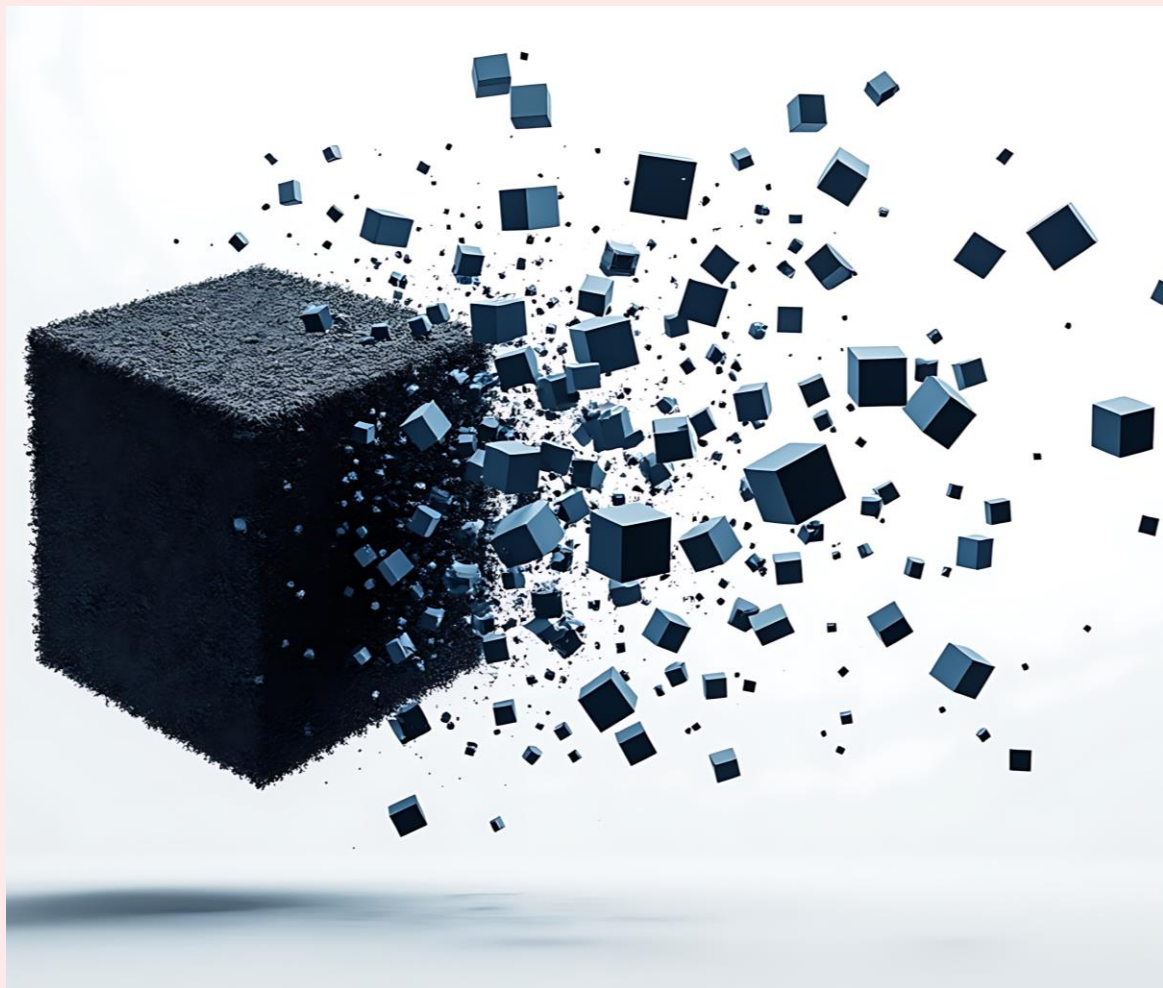


MIGRATION PATTERNS ARE STRAINING WATER & SEWER SYSTEMS STATEWIDE



Population
projections by
county 2025-2050





WE HAVE TO BRING IT UP AGAIN...

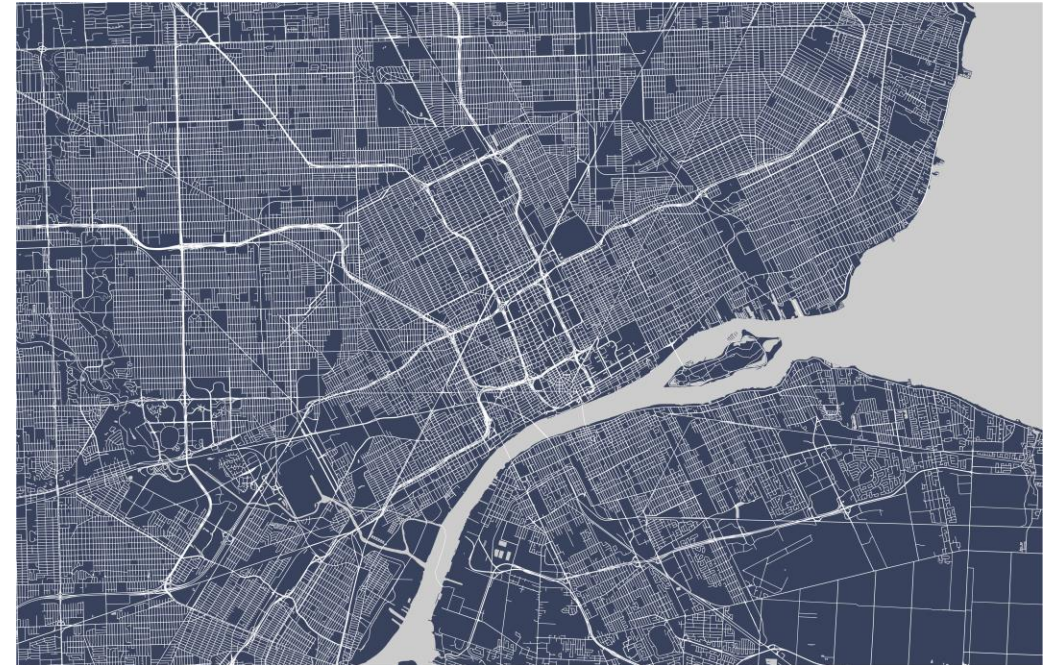
Michigan has a lot of local governments

- 1,240 townships
- 276 incorporated cities
- 257 villages
- Total of 1,773 local units of government
 - Does anyone even see where one ends and the other begins?

HOW INFRASTRUCTURE “COLLABORATION” USED TO OCCUR - ANNEXATIONS

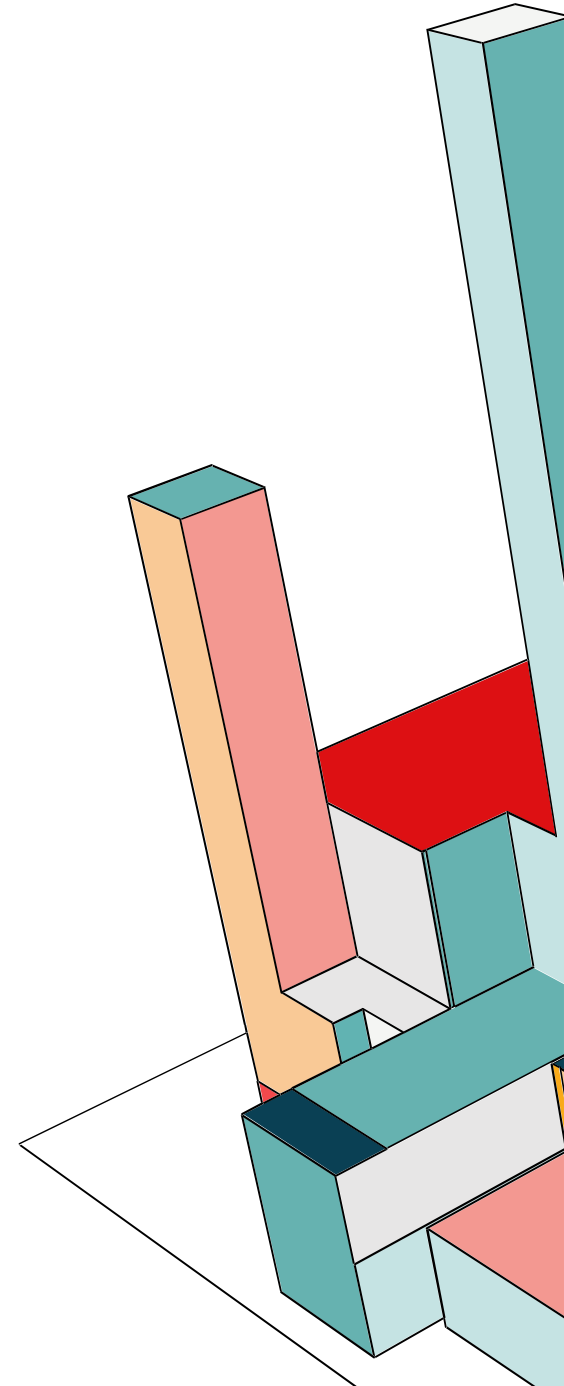
Process:

1. Cities and villages grow
2. Added density and growth in the suburbs strains existing systems
3. Septic can no longer support previously rural areas
4. These areas need water and sewer to support development
5. The township cannot manage or afford these systems on their own
6. The city or village annexes part of the township to support the development
7. The township is upset



ANNEXATION: THE ZERO SUM GAME

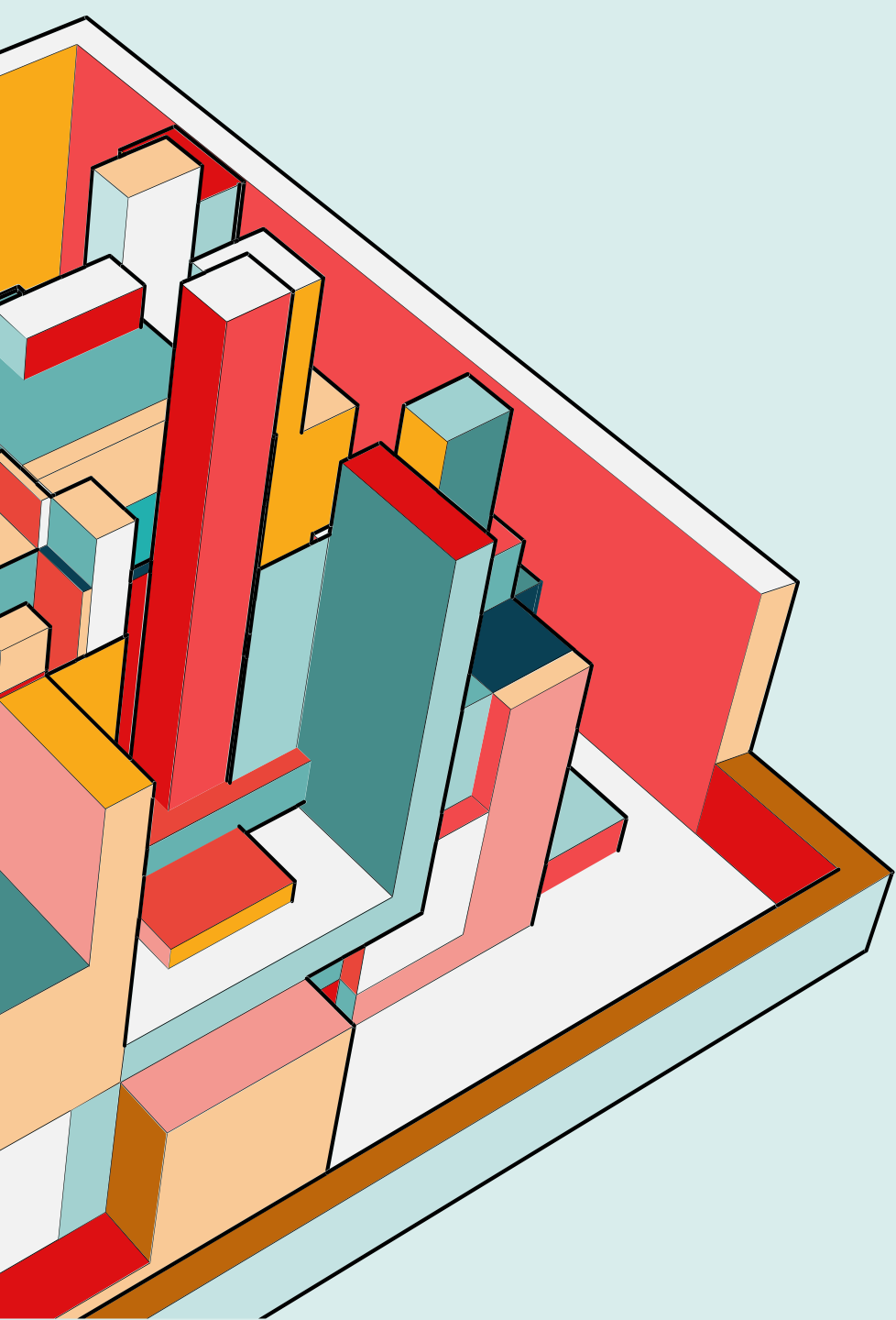
- Why townships oppose it:
 - Loss of tax revenue
 - Loss of land control
 - Political implications
 - Lack of perceived and real benefits



HOW TOWNSHIPS FIGHT ANNEXATION

1. Incorporation as a city or village
 - 'Race to the Courthouse'
2. Lawsuits and referendums
3. Charter townships





HOW COMMUNITIES COLLABORATE ON INFRASTRUCTURE

- 425 Agreements
- Authorities
- Urban Cooperation Act
- Intergovernmental Agreements
- Metropolitan Districts

425 AGREEMENTS

- Intergovernmental Conditional Transfer of Property by Contract (Act 425 of 1984)
- Temporary (50 years or less) transfer of property
- Terms negotiated between township and city (land use, conditions for transfer back, tax revenue sharing)
- Transfer can be re-negotiated and extended at 50 years
- Highly flexible
- Overseen by the State Boundary Commission



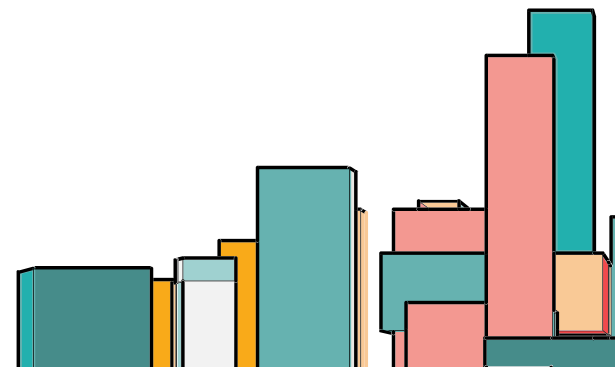
SEWER & WATER AUTHORITIES

- Municipal Sewage and Water Supply Systems (Act 233 of 1955)
- Allows two or more municipalities to create an authority (separate legal entity)
- The authority can own property, charge user fees, issue bonds, borrow funds, create enterprise funds



URBAN COOPERATION ACT

- Urban Cooperation Act (Act 7 of 1967)
- Allows public agencies flexibility in collaborating on specific properties or services
- Option to create a separate entity, but not required
- “Public agency” defined broadly – even includes provinces of Canada
- Whatever is being exercised by the joint entity, all participating entities must have the legal ability to exercise separately
- This act usually instituted for a specific time bound project



INTERGOVERNMENTAL CONTRACTS BETWEEN MUNICIPAL CORPORATIONS

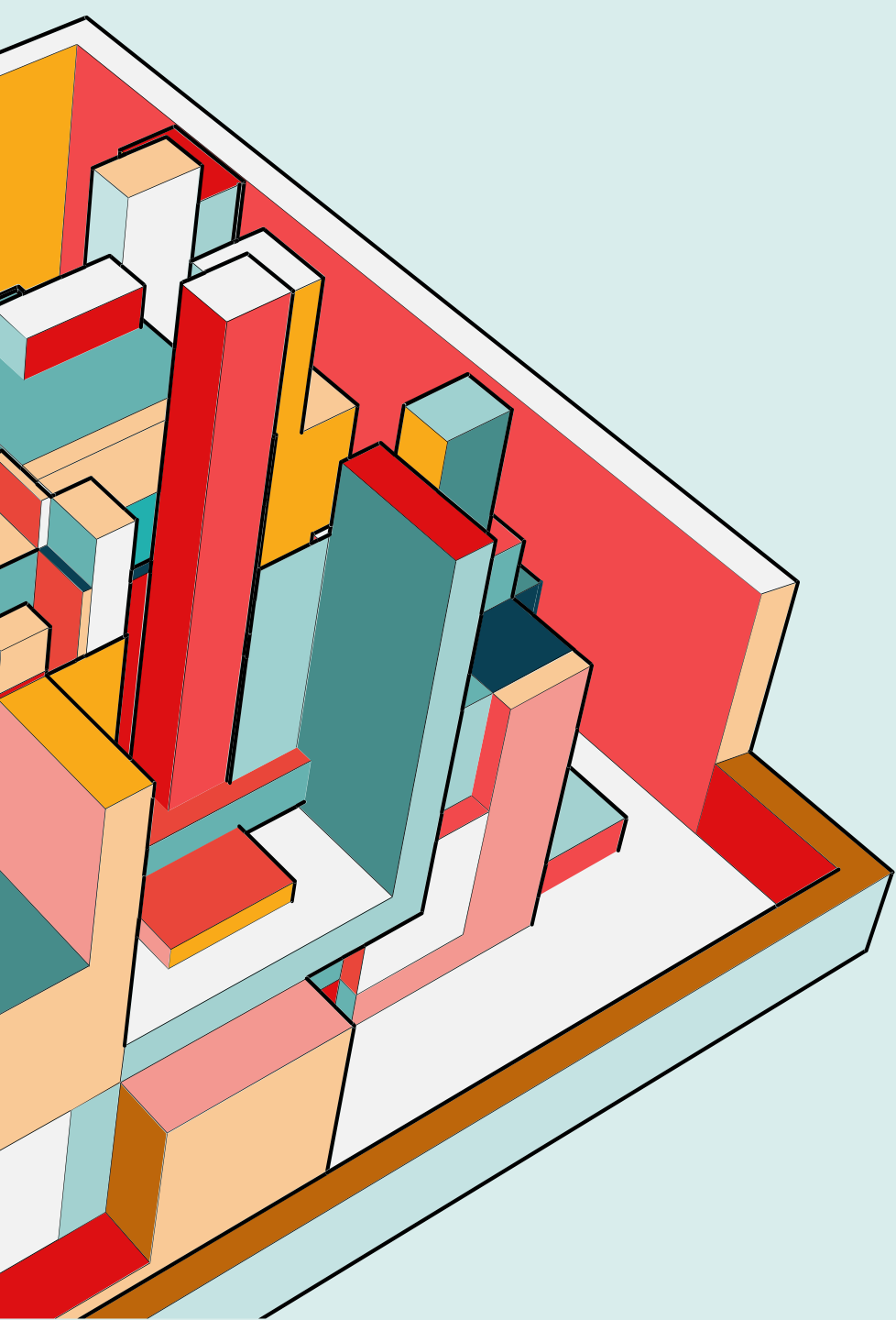
- Intergovernmental Contracts Between Municipal Corporations (Act 33 of 1951)
- Agreements for services across jurisdictions
- Example 1 – A City can provide all water and sewer infrastructure and services to a neighboring Township. Through the contract, the Township gets infrastructure and the City maintains ownership and control over services and property.
- Example 2 – A Township may have its own water infrastructure but it would be redundant to have its own sewer treatment facility. The Township enters an agreement with the City to have its waste water treated through an existing facility.



METROPOLITAN DISTRICTS

- [The Metropolitan District Act \(Act 312 of 1929\)](#)
- Creation of a metropolitan district to service a multi-jurisdictional geographic area's public service needs
- Similar to Authorities, Districts are a separate legal entity
- Used in urbanized areas where jurisdictional boundaries are ambiguous
- District can be formed to manage sewer, water, lighting, waste management, fire, roads and transportation, as well as buildings and facilities





INFRASTRUCTURE AGREEMENTS IN NORTHWEST LOWER MICHIGAN

Anecdotal review of 62 political entities

- 60 local units of government
- 2 tribal nations



METHODOLOGY

- Data collection from EGLE
- Calls with DPW's and other local officials
- Phone survey with questions regarding service boundaries, capacity, conditions, needs and collaborative agreements



DESCRIPTIVE STATS

- Sixty local units of government (LUG) were identified as having some form of infrastructure.
- Two Sovereign Tribal Nations were identified as having some form of infrastructure.
- Forty-eight of the municipalities are participating in some form of **collaborative infrastructure** management or cost-sharing.
- Thirty-six LUG's have both drinking water and sanitary sewer service areas within their jurisdictional boundaries.
- Seven LUG's have only drinking water service areas within their jurisdictional boundaries.
- Seventeen LUG's have only sanitary sewer service areas within their jurisdictional boundaries.
- There are a total of six established **Water [and/or] Sewer Authorities** comprised of two, three or four LUG's working cooperatively.
- There are total of **nine coordinated efforts established by Intergovernmental Contracts** with as few as two members in one circumstance and as many as seven members in another circumstance.
- There are a total of **four valid 425 Agreement** coordinated efforts, all of which are coordination between two LUG's.



Legend

NW Lower MI Local Units w/ Infrastructure (Water/Sanitary)

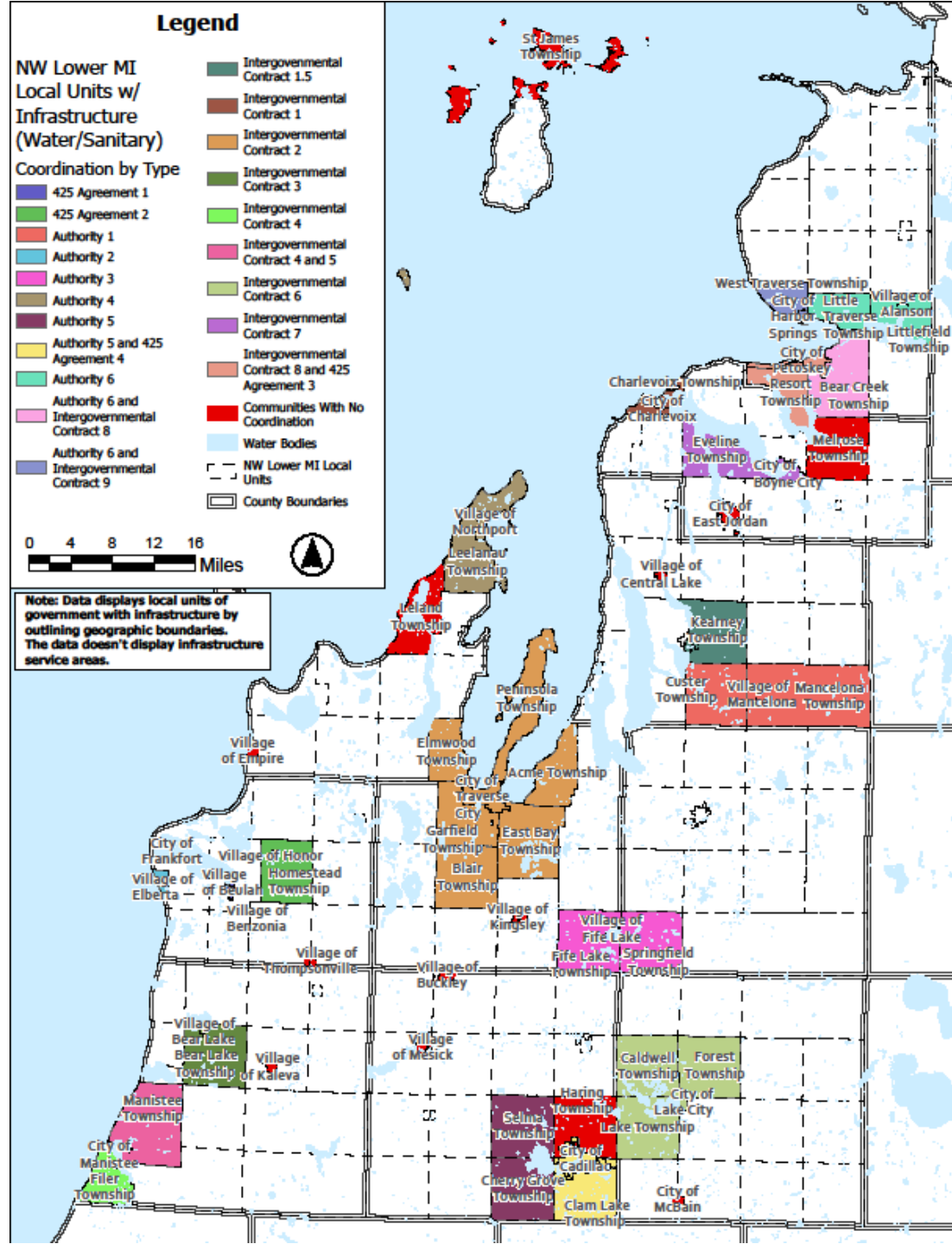
Coordination by Type

- | | |
|--|--|
| 425 Agreement 1 | Intergovernmental Contract 1.5 |
| 425 Agreement 2 | Intergovernmental Contract 1 |
| Authority 1 | Intergovernmental Contract 2 |
| Authority 2 | Intergovernmental Contract 3 |
| Authority 3 | Intergovernmental Contract 4 |
| Authority 4 | Intergovernmental Contract 4 and 5 |
| Authority 5 | Intergovernmental Contract 6 |
| Authority 5 and 425 Agreement 4 | Intergovernmental Contract 7 |
| Authority 6 | Intergovernmental Contract 8 and 425 Agreement 3 |
| Authority 6 and Intergovernmental Contract 8 | Communities With No Coordination |
| Authority 6 and Intergovernmental Contract 9 | Water Bodies |
| | NW Lower MI Local Units |
| | County Boundaries |

0 4 8 12 16
Miles



Note: Data displays local units of government with infrastructure by outlining geographic boundaries. The data doesn't display infrastructure service areas.



KEY FINDINGS

- Difficult to access data – statewide database is limited
- Unclear statewide where service boundaries exist
- Most communities use CIP or IAM plans to guide infrastructure improvements
- Lack of funding is evident in nearly every community
- A lot of infrastructure expansion comes as a result of development rather than guiding development patterns through expansion
- Complex partnerships, difficult to know who manages what



KEY FINDINGS

- Collaborative agreements are typically the only option for rural townships to have access to infrastructure
- 425 agreements, though more flexible than annexation, can still be contentious
- Concerns regarding the need to meet both State and Federal regulations, even when they are different
- One Township used a 425 agreement with another Township to prevent annexation by the City - went to court
- One village had 50 percent Non-Revenue Water emanating from its system



CALL FOR FUTURE STUDIES

1. State-wide coordination
2. Service area boundaries and cooperation
3. Coordinated infrastructure, efficiency and cost savings
4. Systems and technology
5. Grant programs and impacts

THANK YOU

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