

Jackson Smart Energy District - Summary

Strategic Projects team
Consumers Energy

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Executive Summary: The Jackson Smart Energy District combines innovative technology and business models to optimize customer and grid benefits, integrate on-site renewables, and reduce emissions.

Overview

The City of Jackson, real-estate developers, investors, and economic development experts are revitalizing an area of downtown Jackson, Michigan. Consumers Energy's role in this redevelopment area is to establish the Jackson Smart Energy District, an efficient, and affordable, clean energy hub. **Consumers Energy will develop and test approaches to optimize benefits for customers and the grid, integrate intermittent renewables and demand-side resources, reduce emissions, and identify scalable and repeatable business models for urban developments in our service territory.**

Project Goals

- Provide benefits to the grid and to customers
- Satisfy 40% of District's electricity demand with on-site renewables
- Reduce the District's carbon emissions by 90%
- Achieve these goals 15 to 20 years ahead of corporate 2040 Clean Energy goals

Potential solutions

Technologies could include:

- Energy efficiency in buildings
- On-site solar
- Battery storage
- Electric vehicle charging
- Building/energy management systems
- Innovative business models
- Public-private partnerships

Project Details

- 3 new buildings (residential/retail mixed-use, office, parking garage/event space)
- 6 existing buildings (library, annex, church, pavilion, renovation of hotel/office/retail)
- Est. peak load of 1 MW
- Up to 1,000 workers, residents, and visitors

The Jackson Smart Energy District is a clean energy redevelopment, guided by public-private partnership



Within the Jackson Smart Energy District, Consumers Energy intends to demonstrate, 15 to 20 years early, a path toward achieving our corporate-wide 2040 goals

Benchmarking:

- Research of similar projects
- Smart community outcomes to date

Feasibility analysis:

- Electric load estimate
- Maximum solar PV potential
- Emissions reduction potential

Breakthrough goal

1

40% on-site renewable energy generation

2

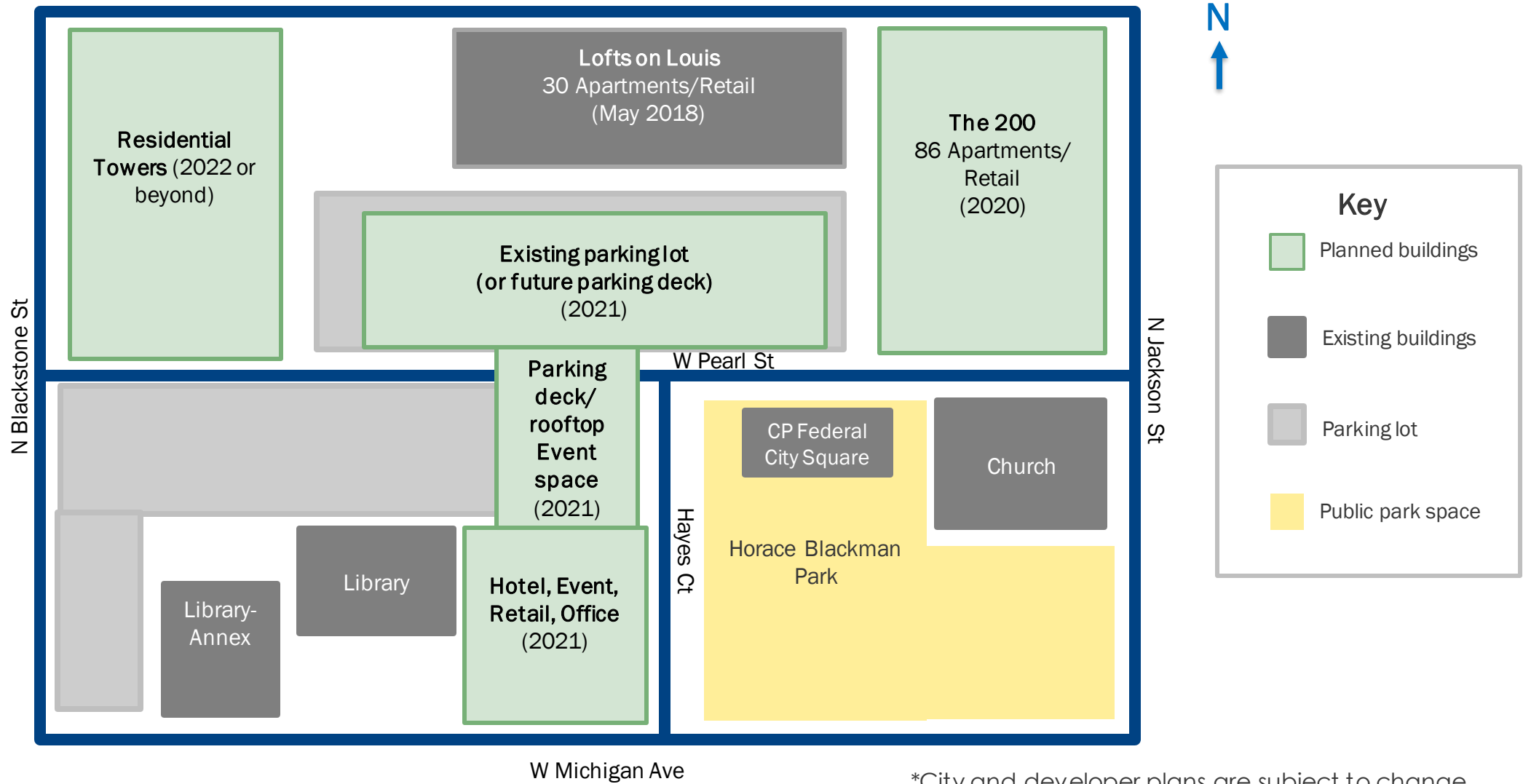
90% carbon emissions reduction from 2005 baseline

3

Creating an overall grid benefit (clean and lean)

The Jackson Smart Energy District includes existing and planned buildings,* multiple private and city stakeholders, and development timelines through 2022

Up to 1,000 people, 9 buildings, 380,000 sq. ft.

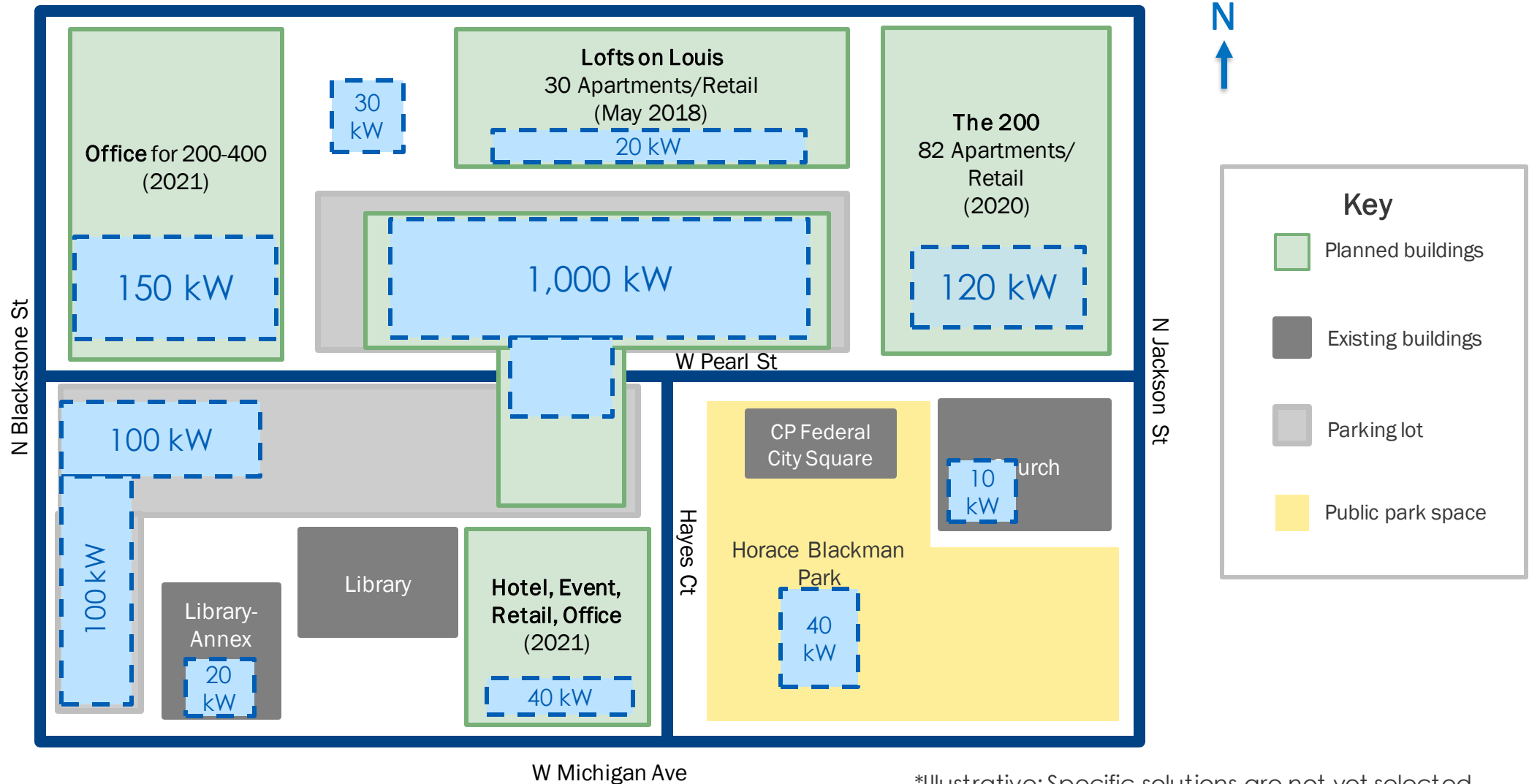


*City and developer plans are subject to change.

There are a number of *possible** solar locations within the District to help achieve our 40% on-site renewables goal

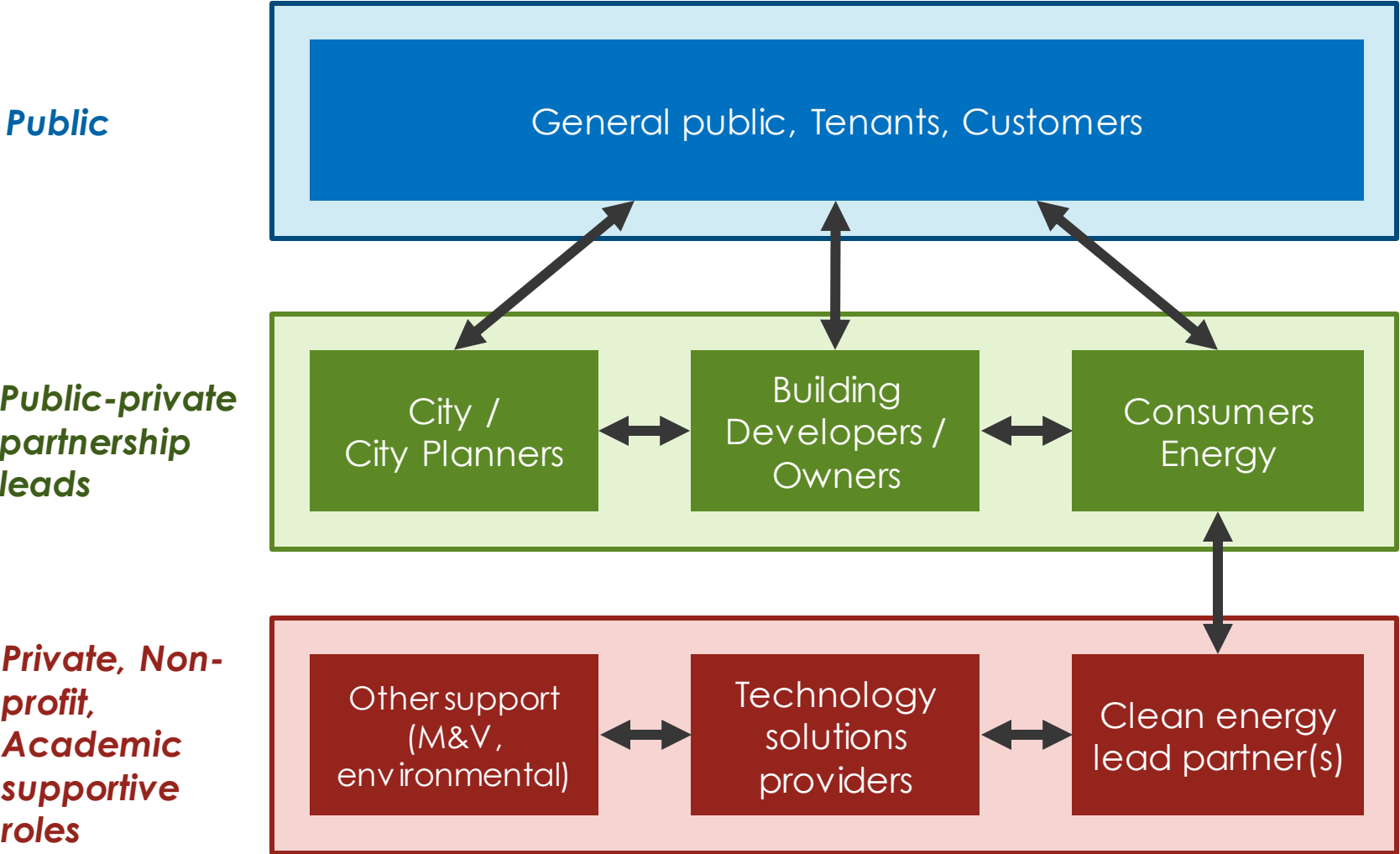
Up to 1 MW peak load (status quo estimate)

High level estimates of maximum solar potential



*Illustrative: Specific solutions are not yet selected.

Simple view of our Public-private Partnership web of stakeholders



Key milestones and learnings from our Jackson Smart Energy District project so far

Milestones and Learnings

- ✓ Early stakeholder alignment on vision, goals, and responsibilities between **City, Developers, Tenants, and Consumers Energy**
- ✓ Multi-party information flow ongoing
- ✓ Consumers Energy takes on clean energy responsibilities:
 - ✓ Understand redevelopment plans
 - ✓ Estimate loads
 - ✓ Benchmark smart energy projects worldwide
 - ✓ Goal creation and initial feasibility analysis
 - ✓ Global RFI to understand best practices
 - ✓ Strategic cost-benefit analysis of smart energy solutions
 - In progress* ✓ System design and implementation of solutions
 - Testing

Assess Multi-party benefits of clean energy solutions

Define path to scale clean energy to other urban districts