



CITY COUNCIL Study Session

January 27, 2025

6:00 PM, Council Chambers - 111 E. Maple Ave.

To view a Council meeting agenda, visit <https://independencemo.portal.civicclerk.com/> and select 'Most Recent Council Agenda'.

PRESENTATIONS

1. Critical Materials Crossroads Energy Materials Campus at Lake City
2. GO Bond Question 1 Overview: Animal Shelter

INFORMATION ONLY

1. **Please Note:** *In accordance with RSMo. 610.021, the City Council may convene in an Executive Session during or after the meeting, in the Council Chambers and move to Conference Room D for the closed meeting, on matters of litigation, legal action, and/or attorney client communications, as permitted by Sec. 610.021(1), on matters of personnel, as permitted by Sec. 610.021(3) and personnel records, as permitted by 610.021(13), on matters of contracts, as permitted by 610.021(12), on matters of real estate, as permitted by 610.021(2) and/or matters of labor negotiations, as permitted by 610.021(9).*

Critical Materials Crossroads

Energy Materials Ecosystem

Independence City Council
Study Session Briefing 1/27/2025



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UMKC



CMC – Energy Materials Ecosystem

MISSION

We produce midstream energy materials for autonomy over US critical goods manufacturing

VISION

To be a peer leader of US energy materials manufacturing capacity by 2035



IMPOSSIBLE
METALS



Enterprise
EKC

Kansas City Kansas
Community College



e ENERGY
IMPACT
PARTNERS

EWING MARION
KAUFFMAN
FOUNDATION

RISING

spire

DIGITALDRIVE

CHEM X
MATERIALS

MRC
MIDWEST RECYCLING CENTER



BIRCH CREEK
INNOVATIONS

KANSAS STATE
UNIVERSITY

BLACK &
VEATCH

XSVX

Pitt

BURNS & MCDONNELL

brewer science



Ligo Partners

JEDUNN



OHIO STATE

CATALYTIC
INNOVATIONS

WSU

JOST CHEMICAL CO.

MU

KU

NE NY

CRITICAL
MINERAL RECOVERY

ARKIN SALES

LINCOLN
UNIVERSITY

Missouri State
UNIVERSITY



IRON PRAIRIE VENTURES



Argonne
NATIONAL
LABORATORY

FEL
FULL
EMPLOYMENT
COUNCIL

Pacific
Northwest
NATIONAL
LABORATORY



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Panasonic
ENERGY

US
STRATEGIC
METALS

DOE RUN
GREAT PLAINS PARTNERS
VENTURE GROUP

Great Jobs KC

mcca

AICL

STARDUST POWER

MISSOURI
S&T

KC
STEM
Alliance

EAGLEPICHER
TECHNOLOGIES

COLORADO SCHOOL OF
MINES

The Critical Materials Crossroads seeks to develop an Energy Materials Campus on 400 acres of land at the Lake City Army Ammunition Plant to produce intermediate and active material.

CMC-EME Key Outputs:

- **Creation of ~10,000 jobs in Kansas and Missouri**
- **Creation of 2,500 direct jobs**
- **\$17B gain (2024\$) to the MO GDP**
- **\$40B impact by 2035**
- **Create 100 kilotons/year of Cathode Active Material (CAM) by 2035**

The Critical Materials Crossroads has over 150 partner organizations and regularly works with ~250 individuals in the development of our ecosystem.

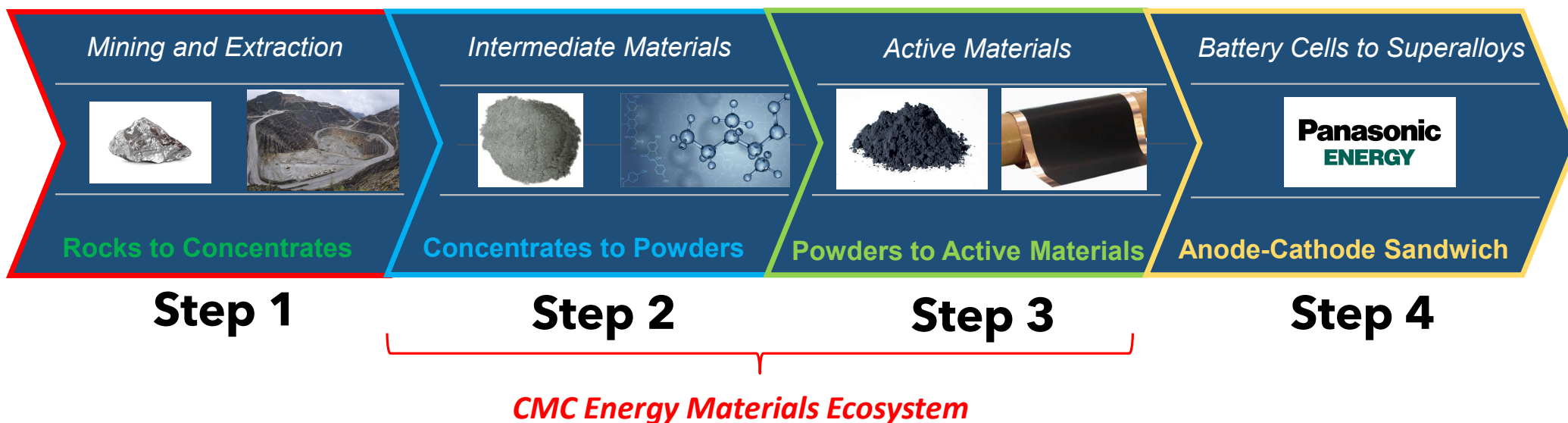
CMC-EME Partner Breakdown:

- **Industry:** 52 partners (large/established businesses)
- **Entrepreneurship:** 21 partners (Small bus, accelerators/incubators)
- **Capital:** 10 partners (Investors)
- **Civic:** 31 partners (workforce and community engagement)
- **Research:** 20 partners (national labs/universities)
- **Government:** 22 partners



The Energy Materials Supply and Value Chain

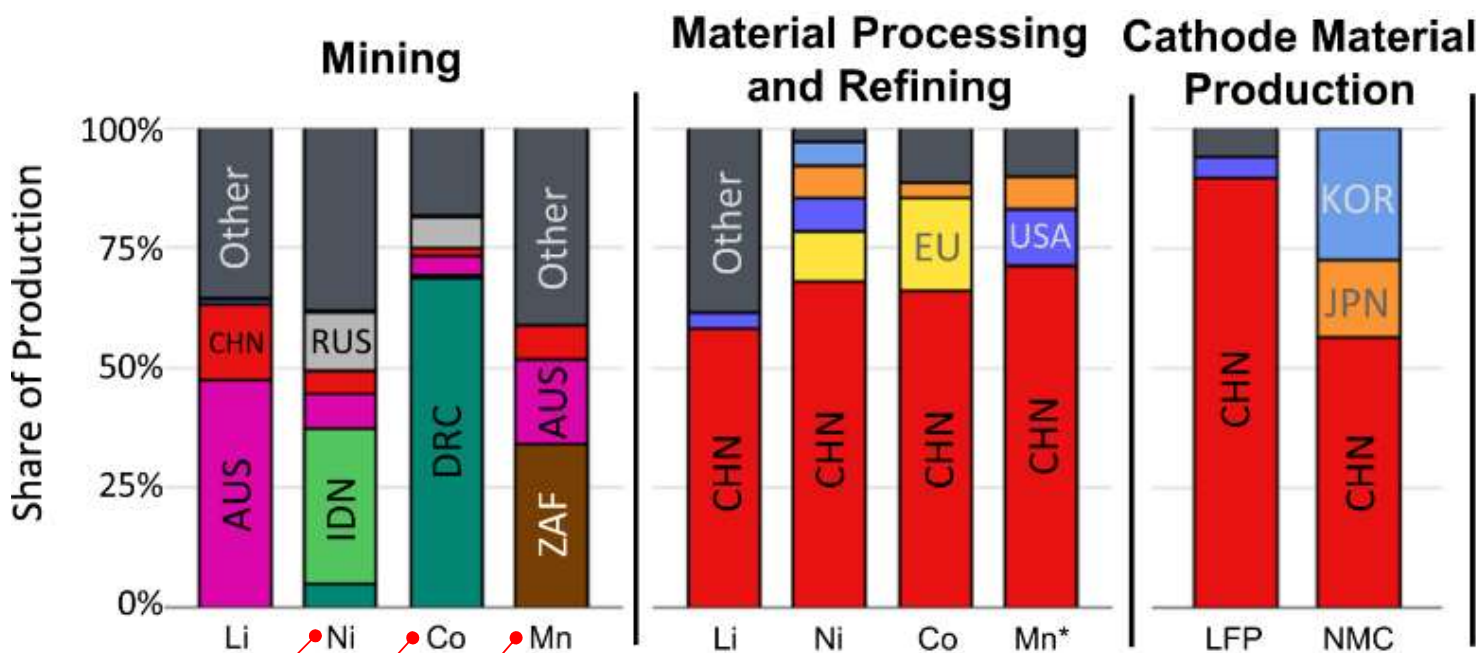
Each **step** creates **value**.....



- The CMC-EME will Focus on step 2 and 3
- Currently steps 2 and 3 do not exist in the USA and are primarily done in China
- The CMC-EME will provide the necessary material to incumbent battery corporations in KS-MO



Why Care About The Upstream?



Nature Communications 15 (2024) 2143

72% of Nickel export from Indonesia is Chinese owned

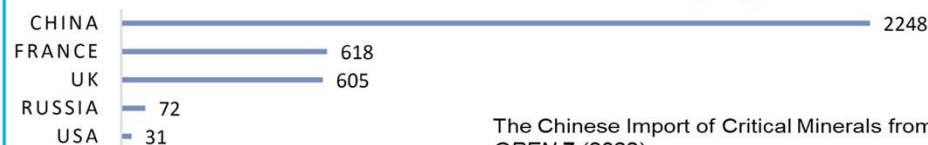
80% of Cobalt export from the DRC is Chinese owned

China is top importer of **Mn** (from South Africa/Gabon/AUS)

China is the primary exporter of smelted **lead** (from PbS)

88% of Graphite in Li-ion batteries is Chinese in origin

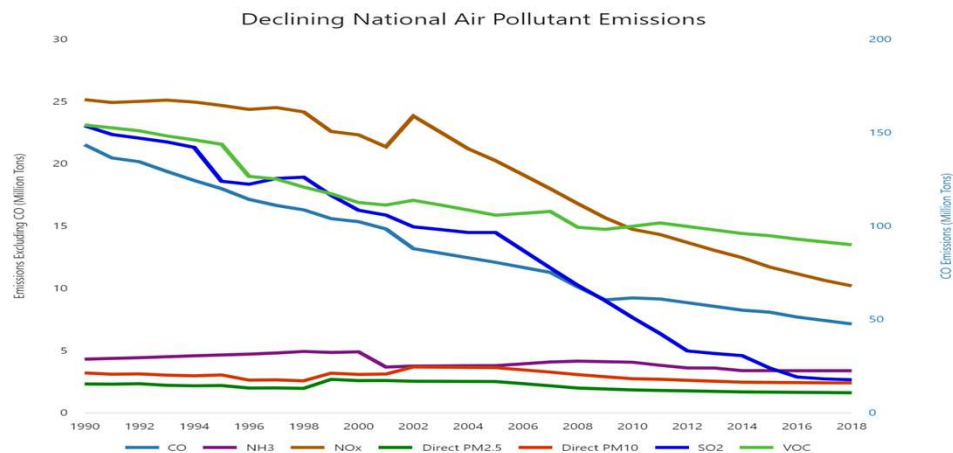
Personnel Contributions to Africa 'Peacekeeping' Missions



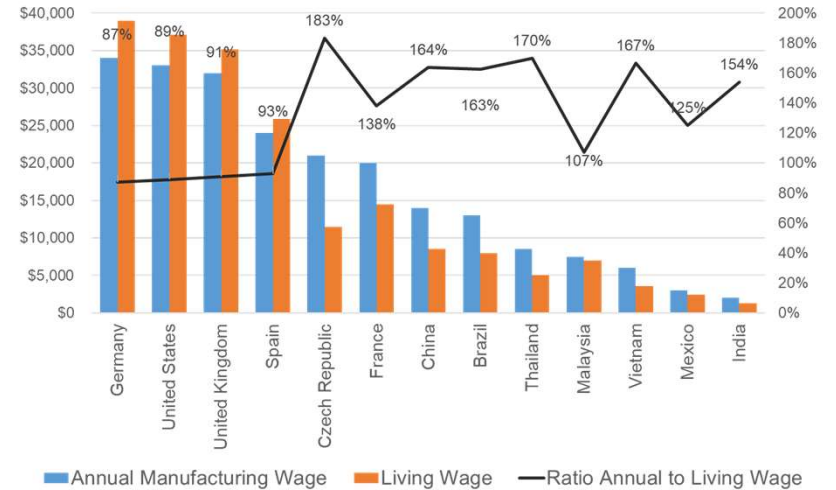
The Chinese Import of Critical Minerals from Africa
OPEN 7 (2022)



Onshoring Challenges – Relative Wages



Manufacturing Sector Single-Person Wage



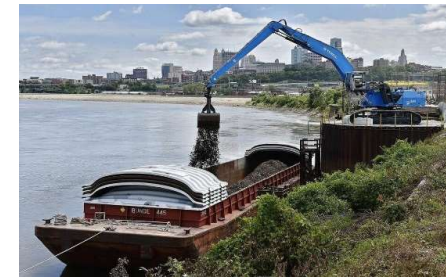


Why the CMC-EME?



**Incumbent Battery
Manufacturers**

**Mississippi ↔ Missouri ↔
Woodswether Barge Terminal**



**Cobalt & Nickel
Natural Resources**

**Incumbent Alkaline
Battery Recovery
Operations**

**Incumbent Mining
Corporations**



**Highest Class 1 Rail
Volume in US**

**Incumbent Alkaline
Battery Recycling
Corporations**



**31 million ft² of warehousing
5 Foreign Trade Zones
4 Intermodal Facilities**

**Incumbent Li-Ion Battery
Recycling Corporations**

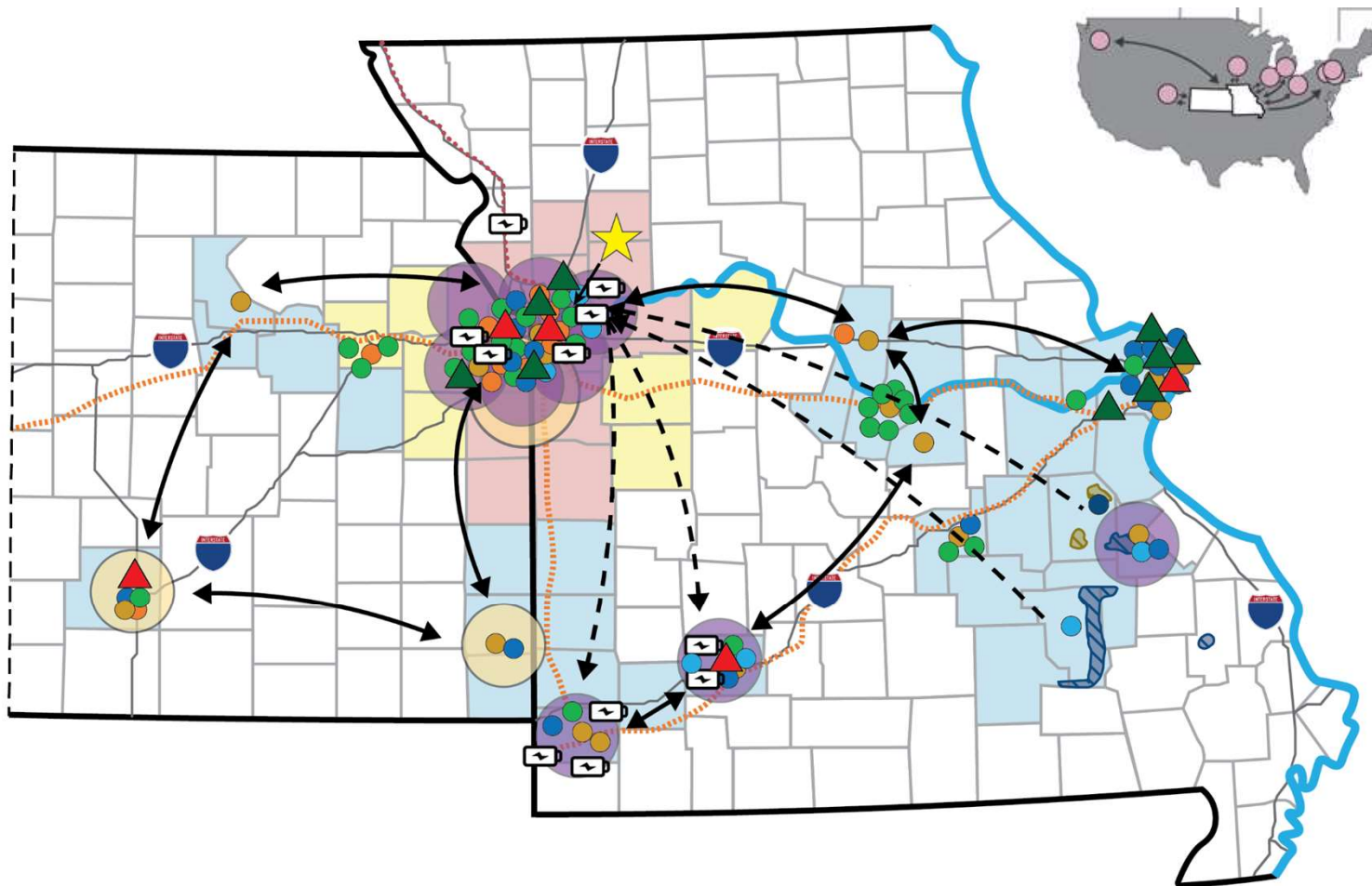




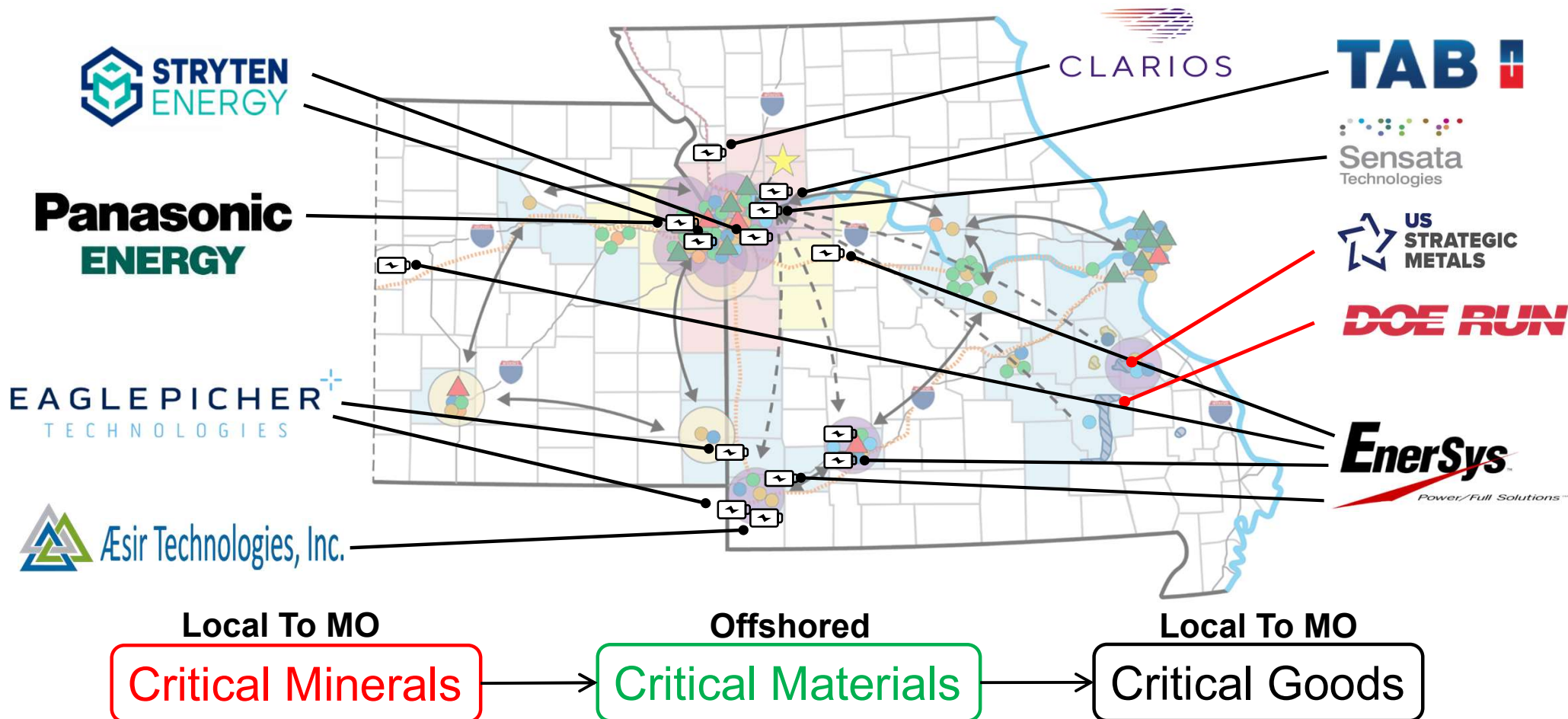
CMC – Energy Materials Ecosystem

Stakeholder Clustering

- Industry
- Community & Govt.
- Capital
- Technical/Research
- External Partners
- Core Partner Location
- Research Hub
- Future Mines
- Current Mines
- Region of Impact
- Primary Region of Service
- Secondary Region of Service
- ▲ Foreign Trade Zones
- ▲ Intermodal Facilities
- ~ River/Terminal
- ⬇ Highways
- ⬇ Class I Rail
- ⬇ I-29
- ↔ Research Flow
- ↔ Material Flow
- ⬇ Local Battery Manufacturers
- ★ Lake City Army Ammunition Plant

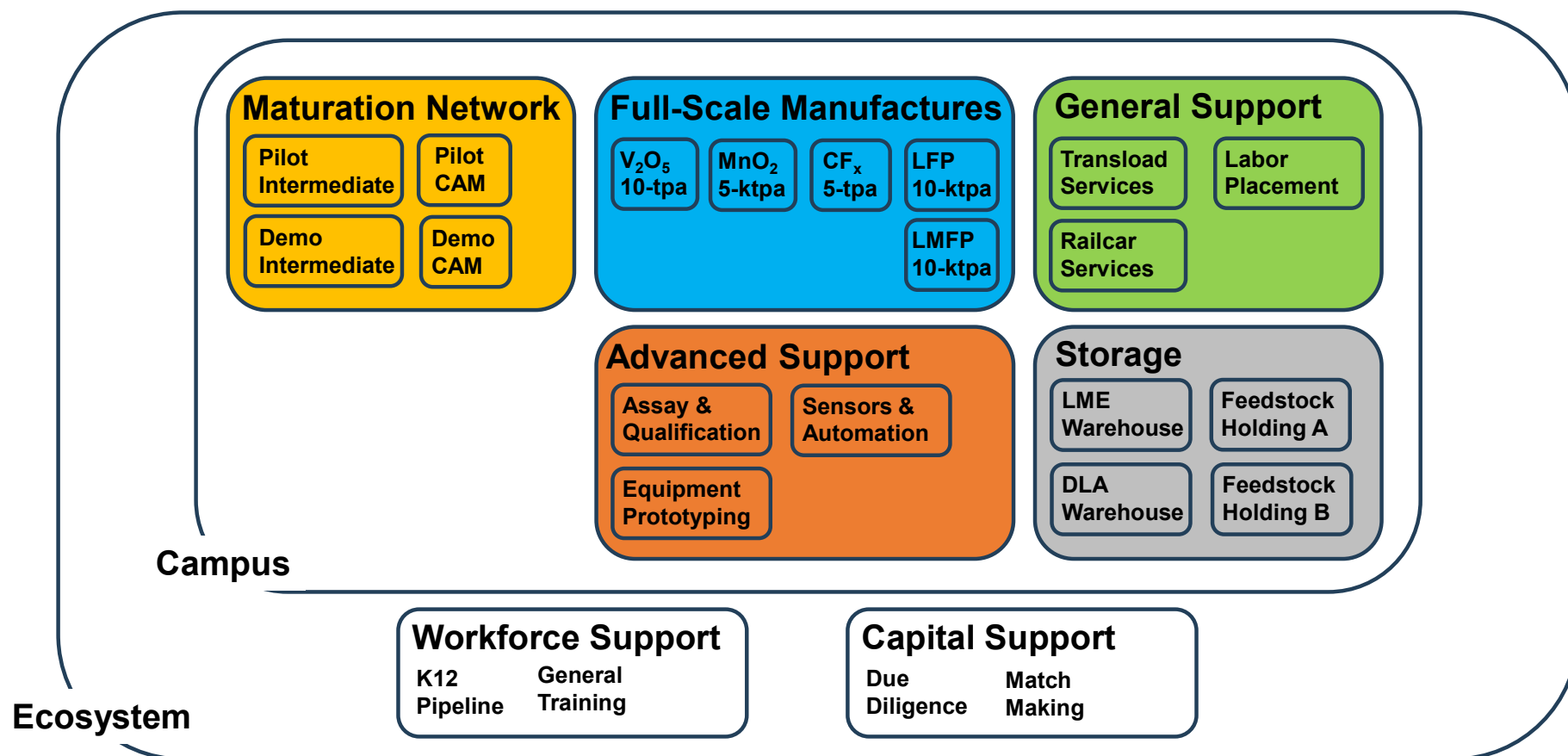


CMC – Energy Materials Ecosystem



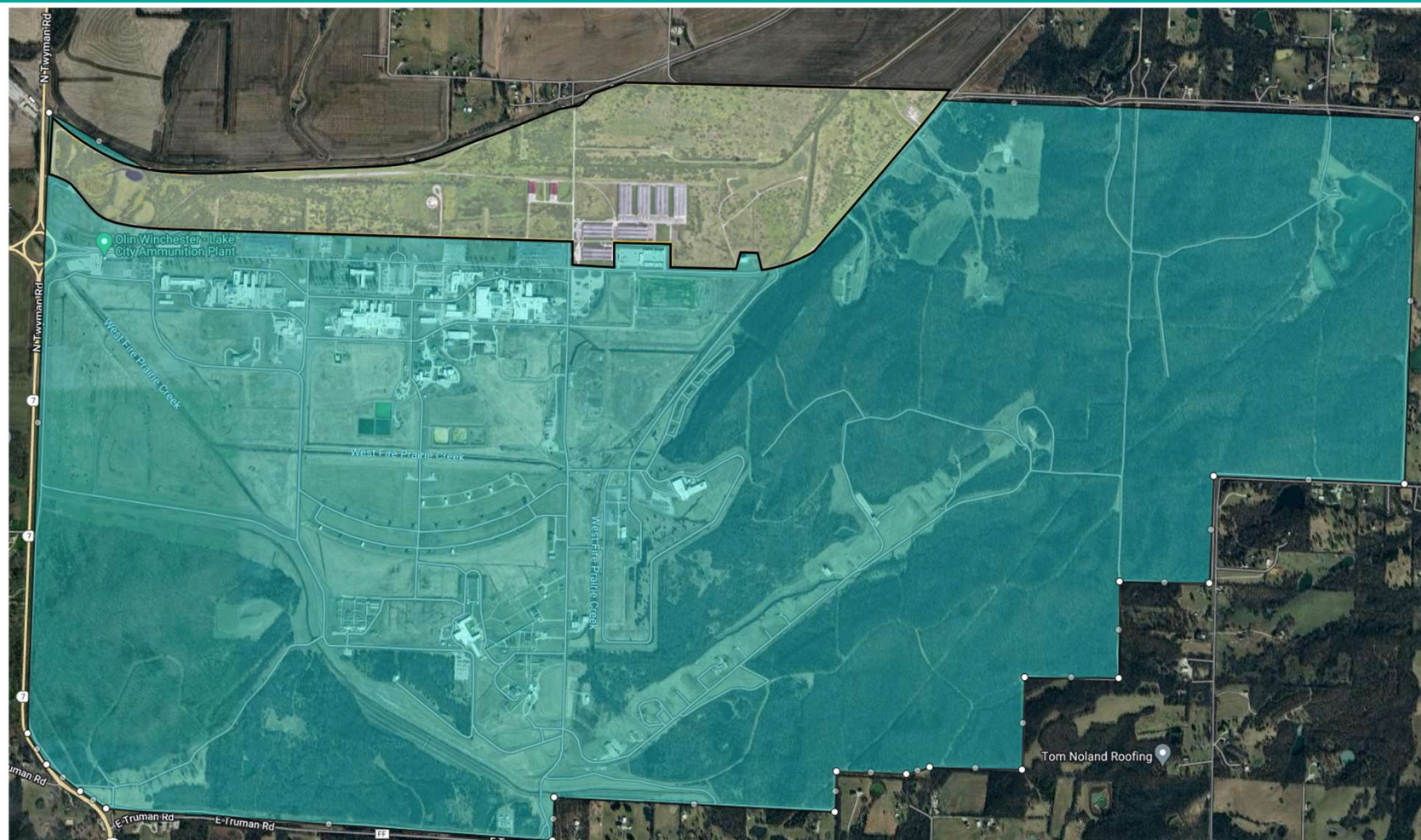


CMC Ecosystem





CMC – Energy Materials Campus



407-acre Ground Lease

MOU in hand

Rail Access / Spur

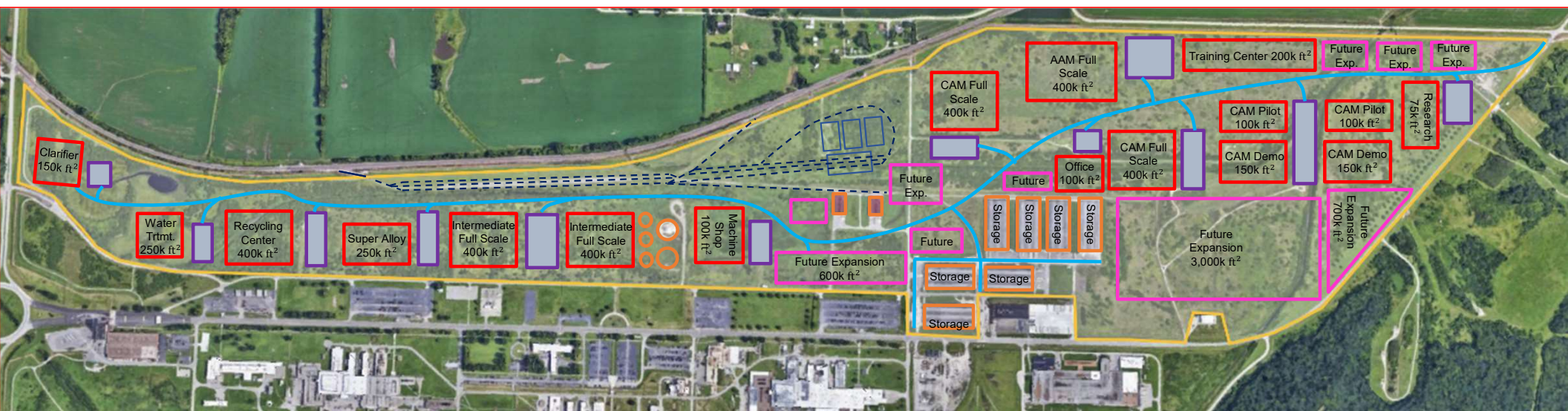
Separate Entrance

Structure Repurposing

80-MW Electric



LCAAP Layout



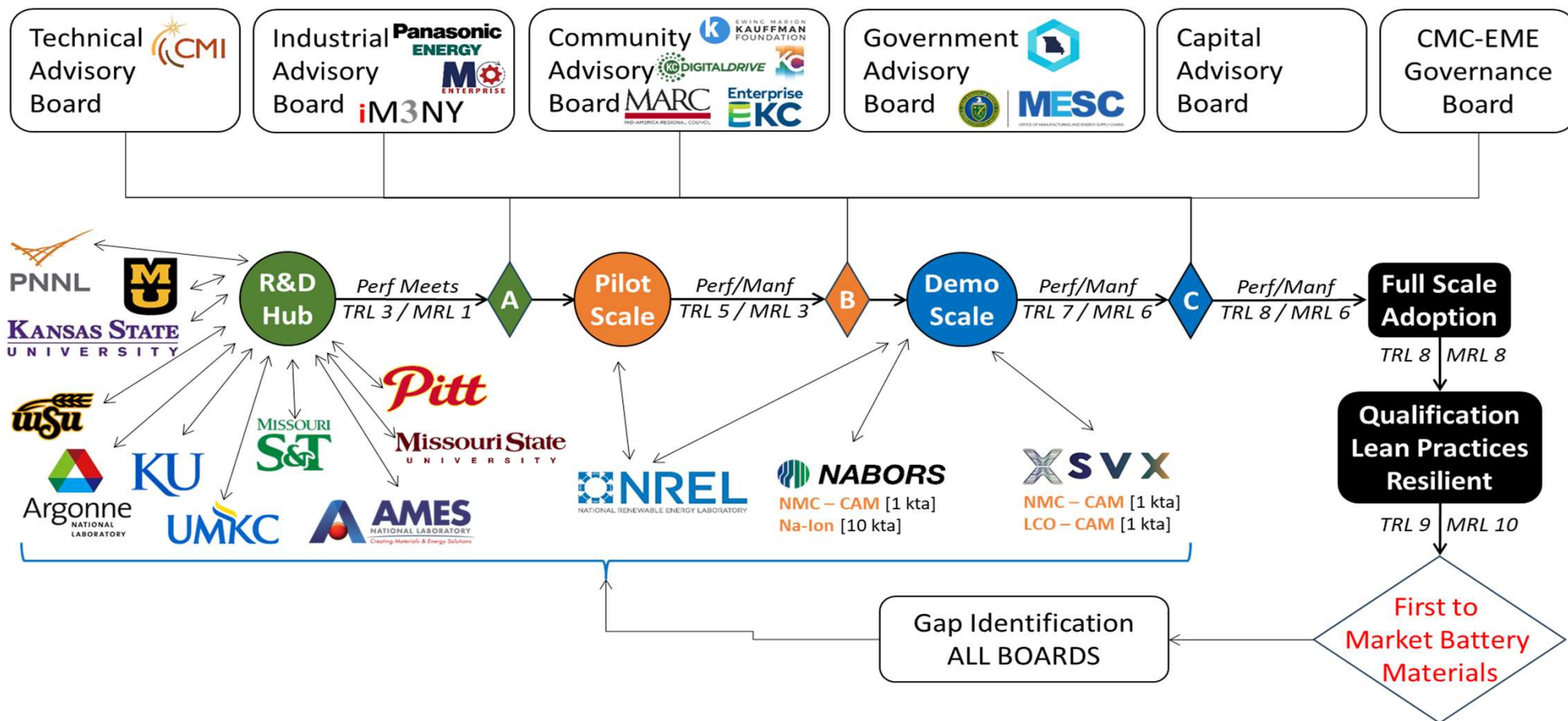
- New Production Facilities
- Parking Areas
- Storage Buildings
- Future Expansion Areas
- Rail Unloading and Storage

- Roads
- Property Boarder
- New Rail Lines



CMC – Energy Materials Maturation Network (EM2N)

Energy Materials Ecosystem → Continuous Innovation → Continuous Economic Growth



CMC – EME Economic Impact

Economic Impacts to KC Metro

- \$17 Billion gain in GDP (5.8%)
- \$40 Billion in gross output
- \$3 billion in equipment and facilities
- \$553 Million in tax revenue

Additional Economic Impacts to KS and MO

Kansas

- \$527M gain in GDP
- \$1,462M in gross output
- 327 jobs created

Missouri

- \$887M gain in GDP
- \$1,793M in gross output
- 568 jobs created

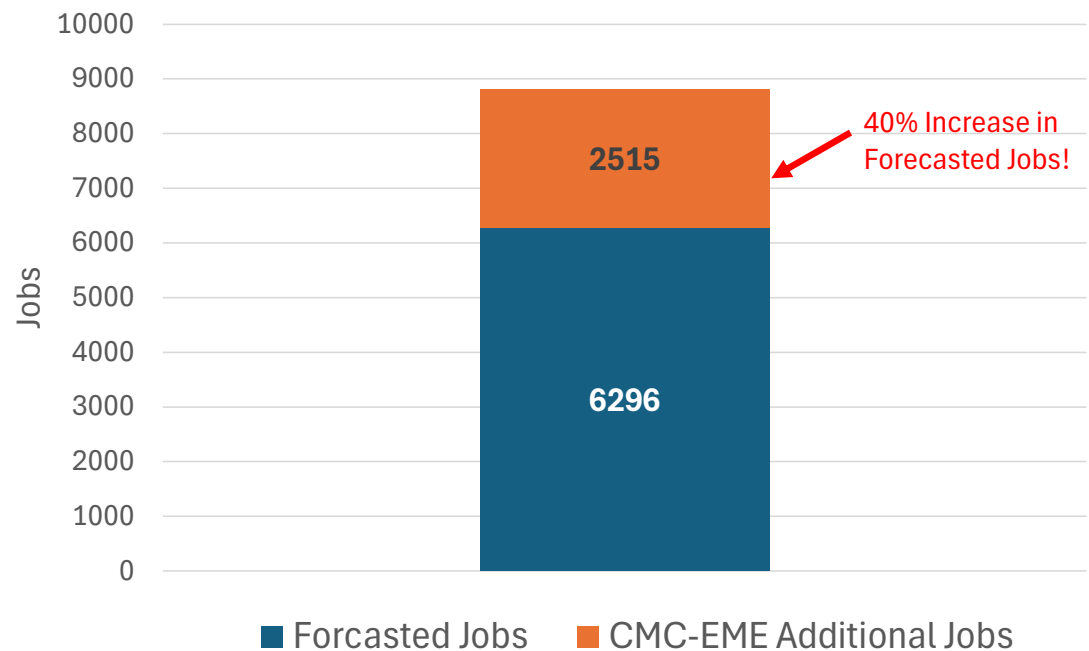
Workforce Impacts to KC Metro

- ~2,500 direct jobs
- ~3,100 indirect jobs
- ~3,300 induced jobs
- Average salary of over \$76,000/yr
- Over 9,500 jobs created in KS & MO

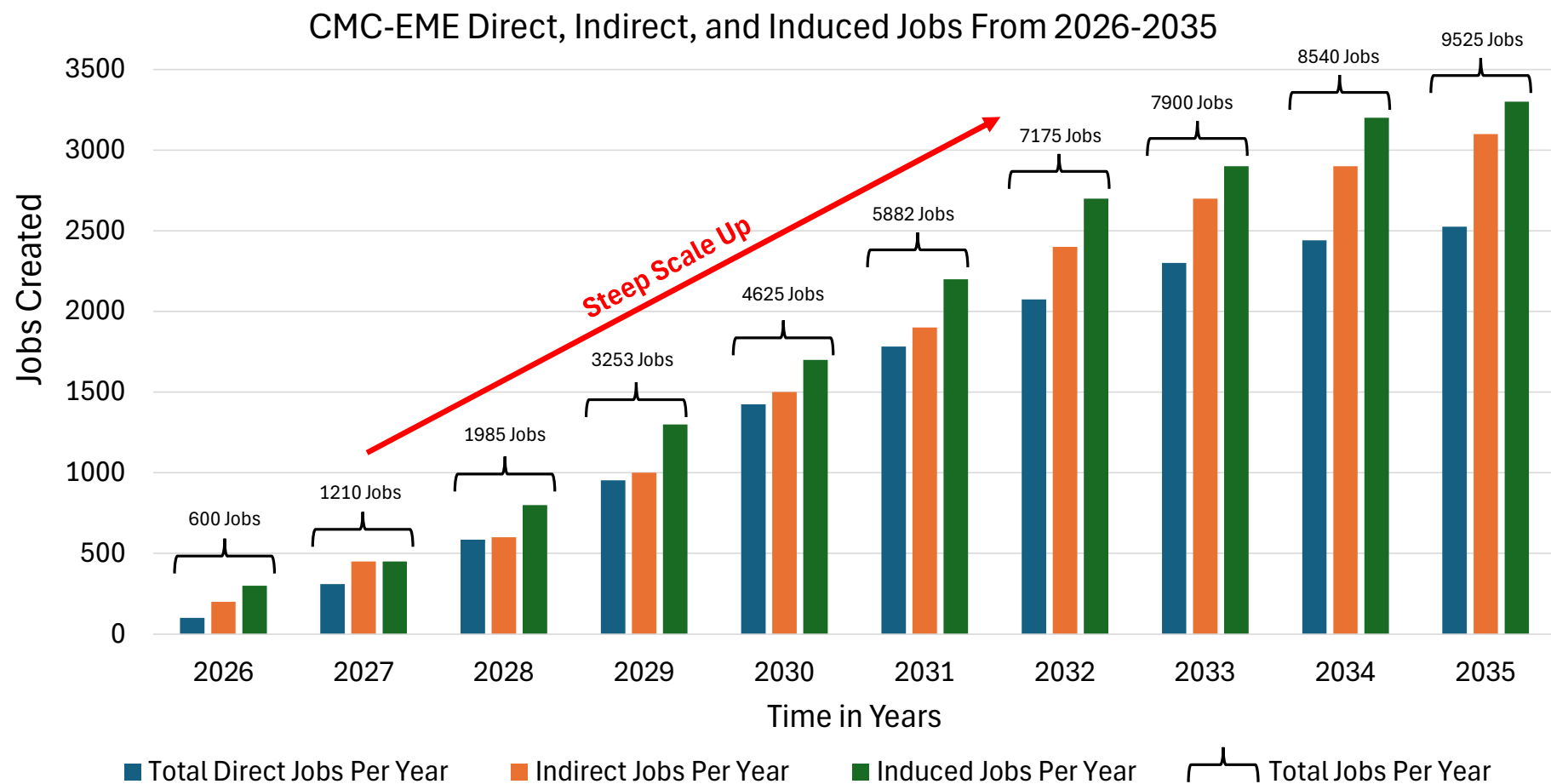
Investments

- Site work, utilities, rail: \$77 M (2026-32)
- Construction of facilities: \$1.07 B (2027-35)
- Material moving and facility equip: \$1.93 B (2027-35)

Forecasted Jobs vs Additional Jobs (2026-2025)



CMC – EME Forecasted Job Growth by SOC Code





CMC Engagement with Independence entities to date



City of Independence



Northpoint Development



Indep School District



Fort Osage School District



Indep Chamber of Commerce



CSL



Lake City Army Ammunition Plant



Union Pacific



*Kansas City Area
Transportation Authority*



-- Thank You --

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Regional Animal Shelter



★A GREAT AMERICAN STORY★

Current Facility

- 30,000 sq ft
- Space for ~100 dogs and ~100 cats
- Vet clinic with surgical space
- 6 enclosed outdoor play yards
- 2 laundry facilities



GO Bond to Purchase

- City owns the land
- County constructed building for approximately \$5,500,000
- County still owes approximately \$3,000,000



Staffing

- 5.1 FTEs for Animal Services
- 14.18 FTEs for Shelter

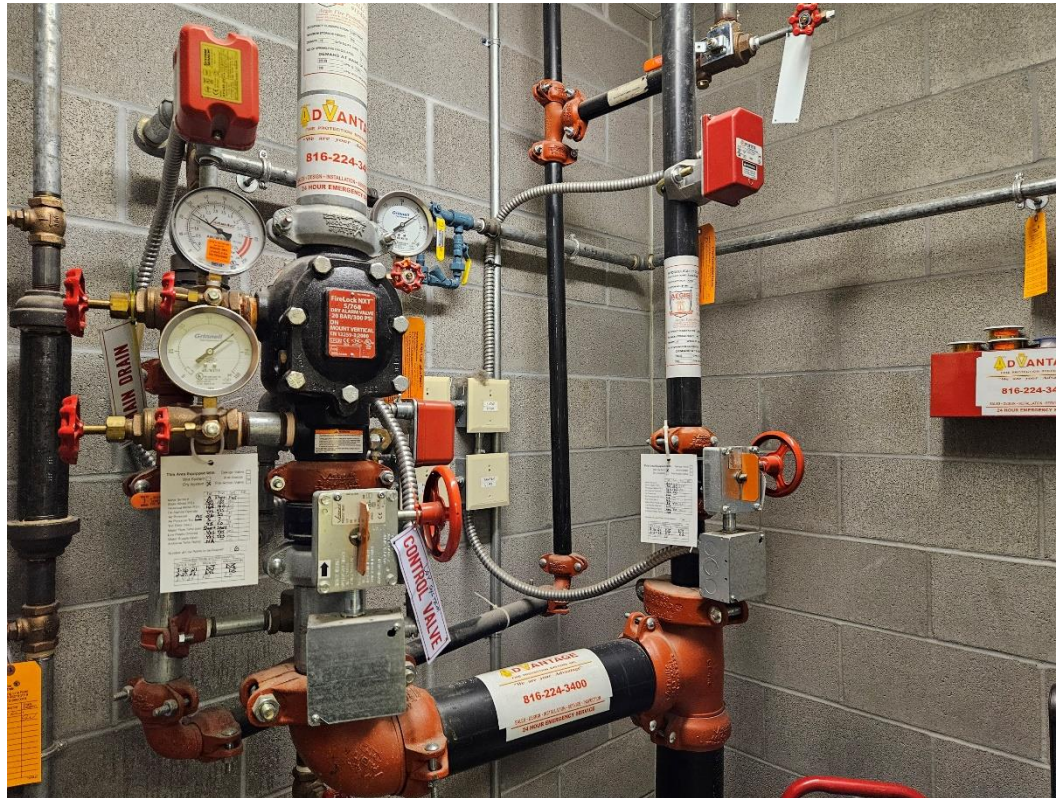


Identified Issues

Fire suppression
Artificial turf replacement
Plumbing Issues
HVAC repair

Fencing
Door closers
Roof leaks

Fire Suppression System



Painted sprinkler heads

Replacement needed for
some dry-type heads due
to age

Gauges need replaced due
to age

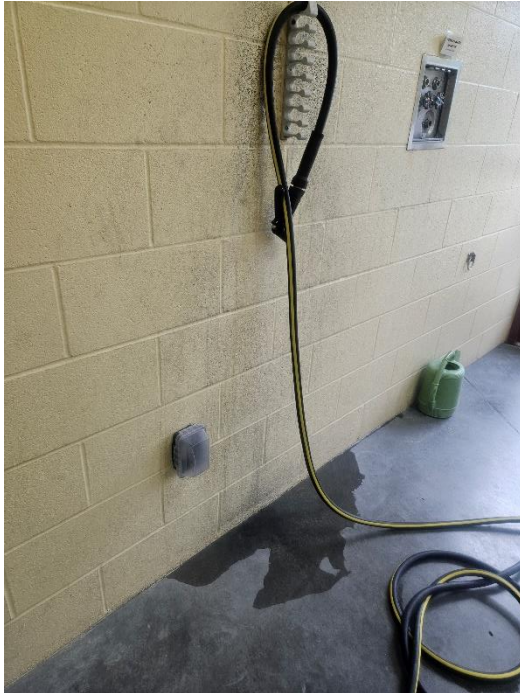
Artificial Turf

Turf is uneven and tearing

Detached from wood
around perimeter



Plumbing Issues



Multiple leaks
throughout the
building

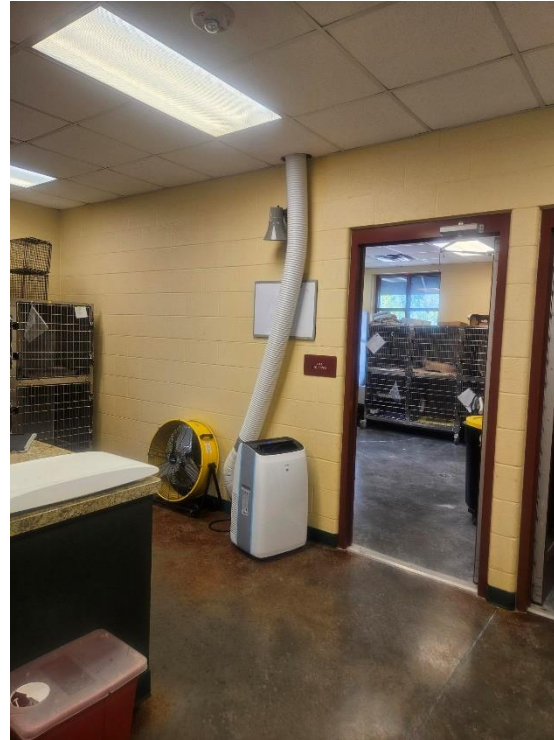
Non-functioning hot
water heater

County has started
repairs/replacement

HVAC

Large unit recently
repaired

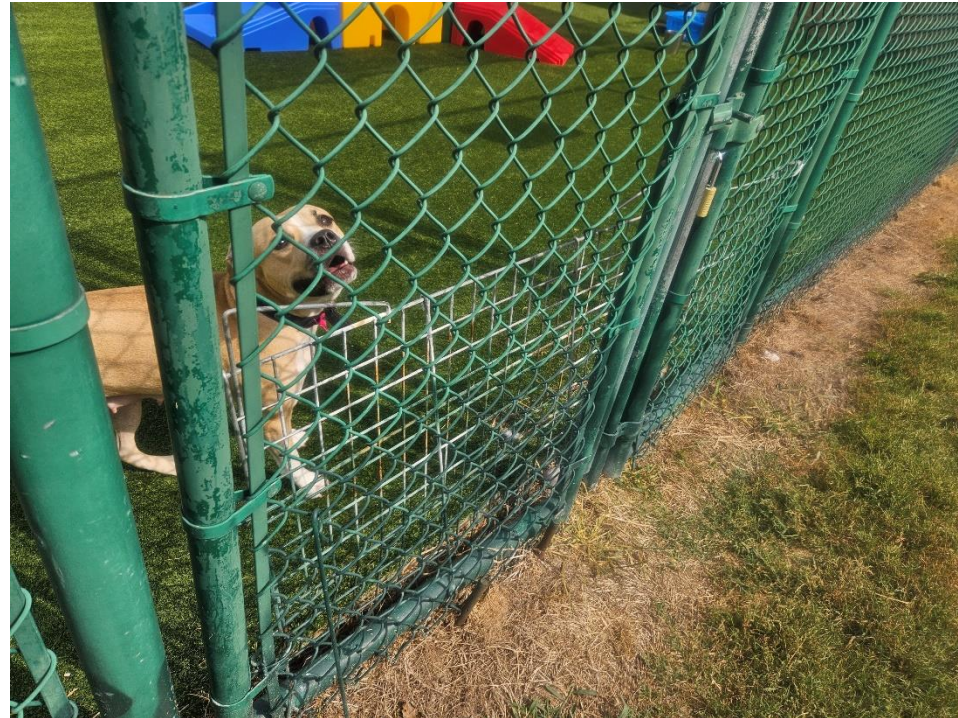
County has
conducted repairs



Fencing

Rust is deteriorating many sections

Additional fencing to allow a double gate system is needed for safety



Door Closers



County has started
repairs/replacement

Safety hazard for animals and staff,
closing too suddenly or failing to
close behind staff

Roof Repairs

Multiple leaks
throughout building

County has conducted
repairs



Cost to Build Comparable Site

Source/Site	Cost per sq ft	Project cost factor for FFE, site factors	Total projected cost
Humane Society (2002 estimates)	\$150	1.4	\$6,300,000
Bacon Group	\$350	1.2	\$14,700,000
Rolla Animal Shelter	\$280	1.2	\$10,080,000
KC Pet Project	\$333	1.2	\$11,988,000

Questions?

City of Independence
Health & Animal Services Department

Christina Heinen, Director
Jennifer Polston, Assistant Director