BONNEVILLE POWER ADMINISTRATION

Energy Efficiency in the time of COVID-19

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Agenda

1. Research Summary: Key Takeaways

2. Key Findings

a. General Findings
b. Industry Findings

3. Conclusions

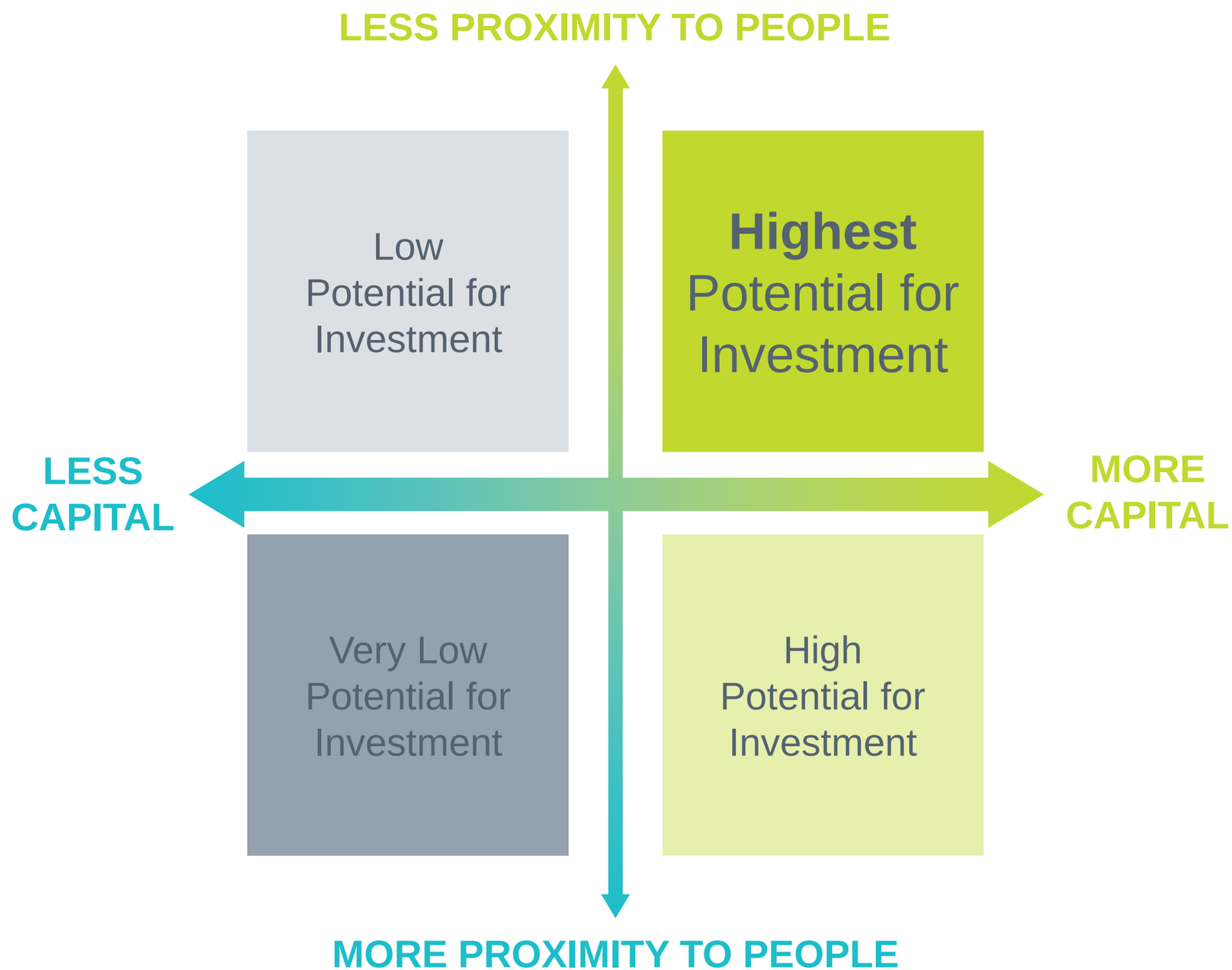
4. Appendix

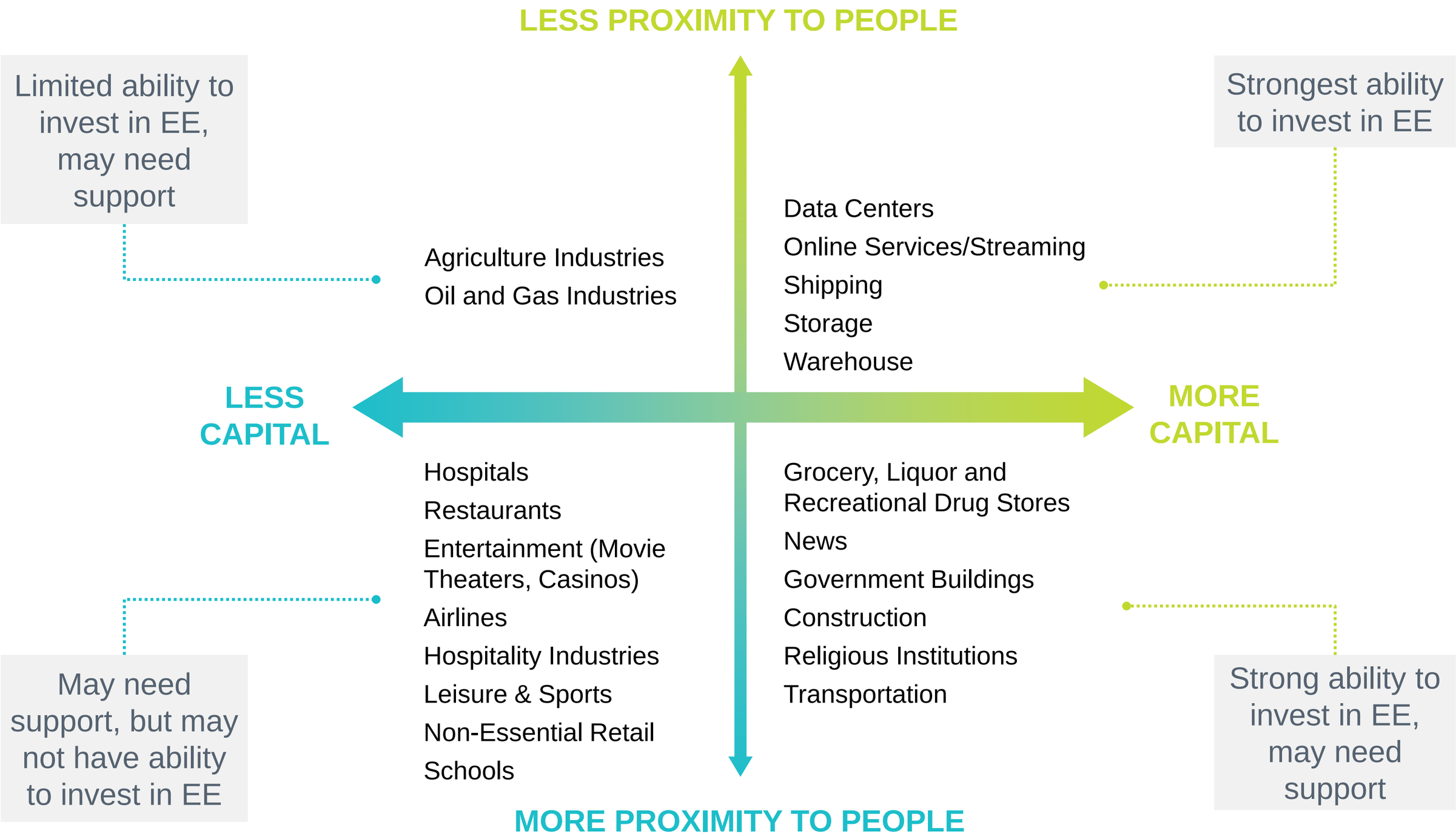
Research Summary

Research Question

Which business types are most (and least) likely to invest in energy efficiency upgrades post-COVID-19?

More Capital + Less Contact = Highest potential for EE

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Limited ability to invest in EE, may need support
Strongest ability to invest in EE
Agriculture Industries
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Key Findings

General Finding #1

Public sector & institutions will have more ability to invest than private sector

Institutions are historically resilient

Government funds may continue when private funds run out (Source: dlapiper.com)

Much government funding is not immediately impacted by economic downturns

Institutions are not created equal, and have different funding sources

But all are resilient to market change

Institutional buildings will see the smallest decline in 2020, with spending on these facilities projected to drop almost 5% this year (2020), and then only 2% in 2021 (Source: aia.org)

General Finding #2

There may be a temporary downturn in construction projects in the next 6-12 months

Rough road for commercial construction

Nonresidential construction is one of the last segments of the economy to enter recession (Source: ecmweb.com)	Projects finishing up result in job loss while new designs are put on hold
Projected growth for 2020 revised to 11% decline (as of April) (Source: aia.org)	The commercial building sector (office, retail and other commercial structures, and hotels) is expected to be the hardest hit, with spending projected to decline almost 12% this year and an additional 8% in 2021. (As of July)
New construction takes a hit (Source: construction.com)	In the top 10 metro areas, commercial and multifamily new construction slid 21% and only one metro area posted an increase. • Seattle reported 26% decrease ($1.6 billion) in H1 2020

New Data Looking Hopeful

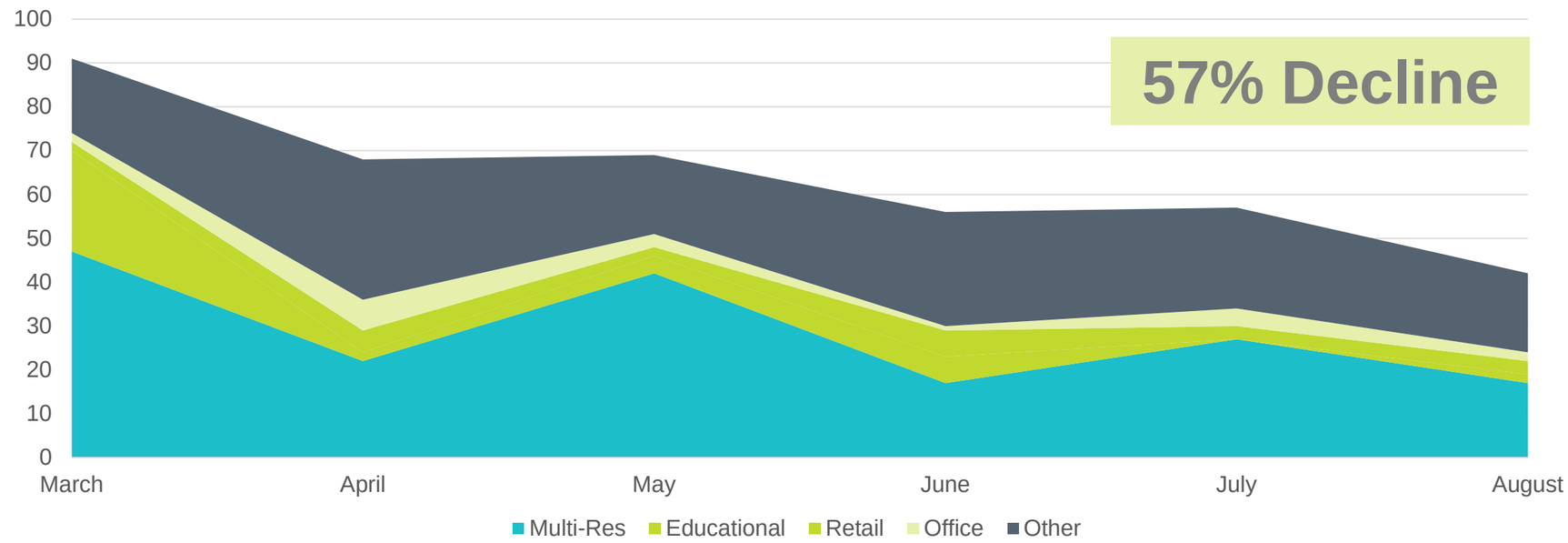
"Once the economy reopens, there will be a dramatic need for post-pandemic design in most existing buildings. This will drive a surge in building retrofits, which will benefit the design and construction industries." (aia.org)

"The May and June payroll reports indicated that the economy added 7.5 million net new jobs, after shedding 22 million in March and April. The national unemployment rate fell from 14.7% in April to 11.1% in June." (aia.org)

Index results indicate that 32% of contractors plan to hire more workers in the next six months, while 48% believe their workforce will stay the same. Only 15% expect to employ fewer workers. (uschamber.com)

Observed Regional Downturn in ConstructConnect

Projects that have recently entered design phase



Building Type	Mar-20	Apr-20	May-20	June-20	July-20	Aug-20	Total
Multi-Residential	47	22	42	17	27	17	172
Educational	23	2	4	6		2	37
Retail	2	5	2	6	3	3	21
Office	2	7	3	1	4	2	19
Other	17	32	18	26	23	18	141
Grand Total	98	68	69	56	57	42	390

But: Strong Pipeline, Few Abandoned Projects

ConstructConnect: total projects found, by building type, March-August

- Large number of projects in design phase
- Most abandoned projects are multi-residential or educational
- Educational has low design, highest under construction, and high abandoned
  - Indicates an urgent completion of existing projects, but few expected and some failed

Building Type	Design	Under Construction	Abandoned
Multi-Residential	664	82	40
Educational	71	91	19
Roads / Highways	160	13	4
Bridges / Tunnels	115	4	1
Office	64	17	8
Water / Sewer	58	14	4
Retail	40	21	4
Hotel / Motel	47	9	2
Municipal	25	17	9
Clubhouse / Community Centers	31	6	3
Warehouse / Distribution	27	9	3
Residential Subdivision	16	14	9
Medical	20	13	2
Fire / Police	23	5	3
Other	173	61	24
Total	1534	376	135

General Finding #3

Customers are interested in HVAC improvements – specifically air circulation & ventilation

Ventilation is protection

"The design of shared spaces and building ventilation systems may all be fundamentally altered as a result of this crisis"

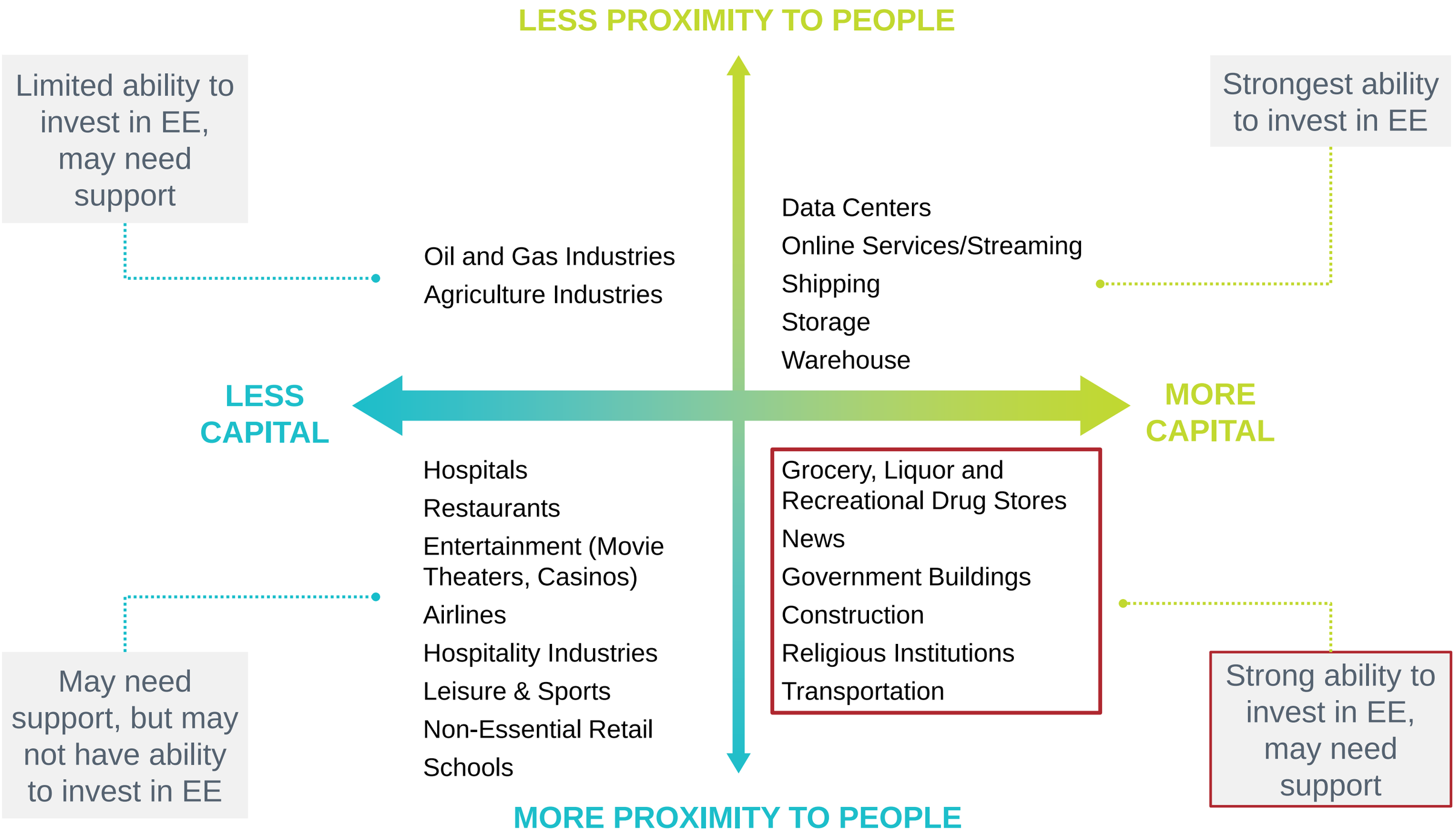
(Source: Bisnow News)

Changes to building operations including heating, ventilating, and air-conditioning systems can reduce airborne exposures

(Source: ASHRAE)

Shutting down key building systems like heating, ventilation and air conditioning (HVAC) can lead to unhealthy air or corrosion in boilers and chillers.

(Source: greentechmedia.com)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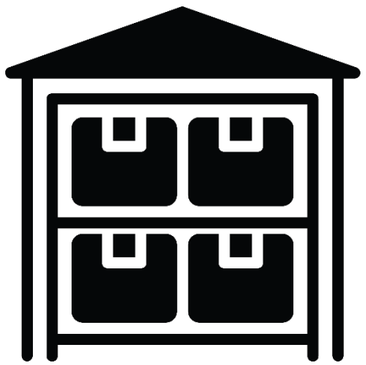
Industry Finding #1

Industries retaining more capital during COVID-19 will have more potential to invest in EE as the economy recovers

Some Industries are Booming

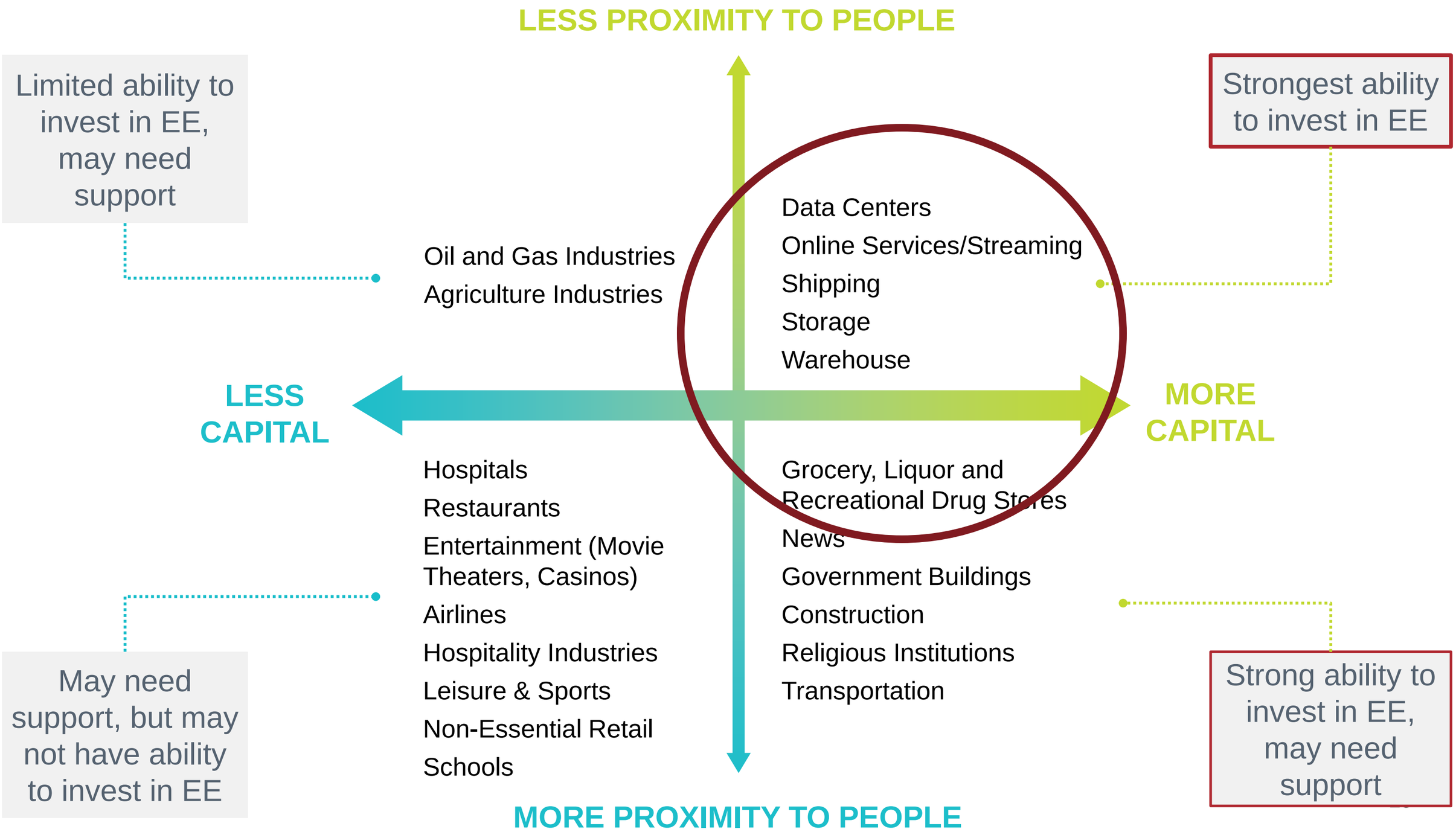
Best performing sectors have been tied to digital economy

- At-home entertainment surging
- Online retail, including Amazon but also brick & mortar retailers like Walmart are doing big online business



Storage unit use is increasing

Grocery, liquor, recreational drug stores, and food delivery services are in high demand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Industry Finding #2

Institutions with reliable funding may have more capital to invest as the economy recovers

Institutional funding may keep projects afloat

Public Schools

- Spotlight: Pittsburgh Public schools plans to finish all 42 retrofit projects that are on the drawing board (Source: Pittsburgh.cbslocal.com)
- Updated funding capacity depends on upcoming legislation: HEALS Act (Senate) and HEROES Act (House) (Source: future-ed.org)

Other Institutions

- Military bases
- Federal or municipal buildings
- Religious institutions

Industry Finding #3

Industries with severely affected revenue during COVID-19 may not have money to invest even when the economy recovers

Industries in Need of Support

Hotels, restaurants, entertainment, gyms, retail, auto

Hospital impact is severe

- AHA estimates a total four-month financial impact of $202.6 billion in losses for America's hospitals and health systems (average $50.7 billion per month)
- Lost revenue from cancelled surgeries and additional cost from purchasing PPE & additional workers
- Down on spare cash, but could benefit greatly from building improvement incentive programs

Agriculture, Oil/gas & transportation

Oil & gas, agriculture industries seeing deep cuts with dampened transportation worldwide

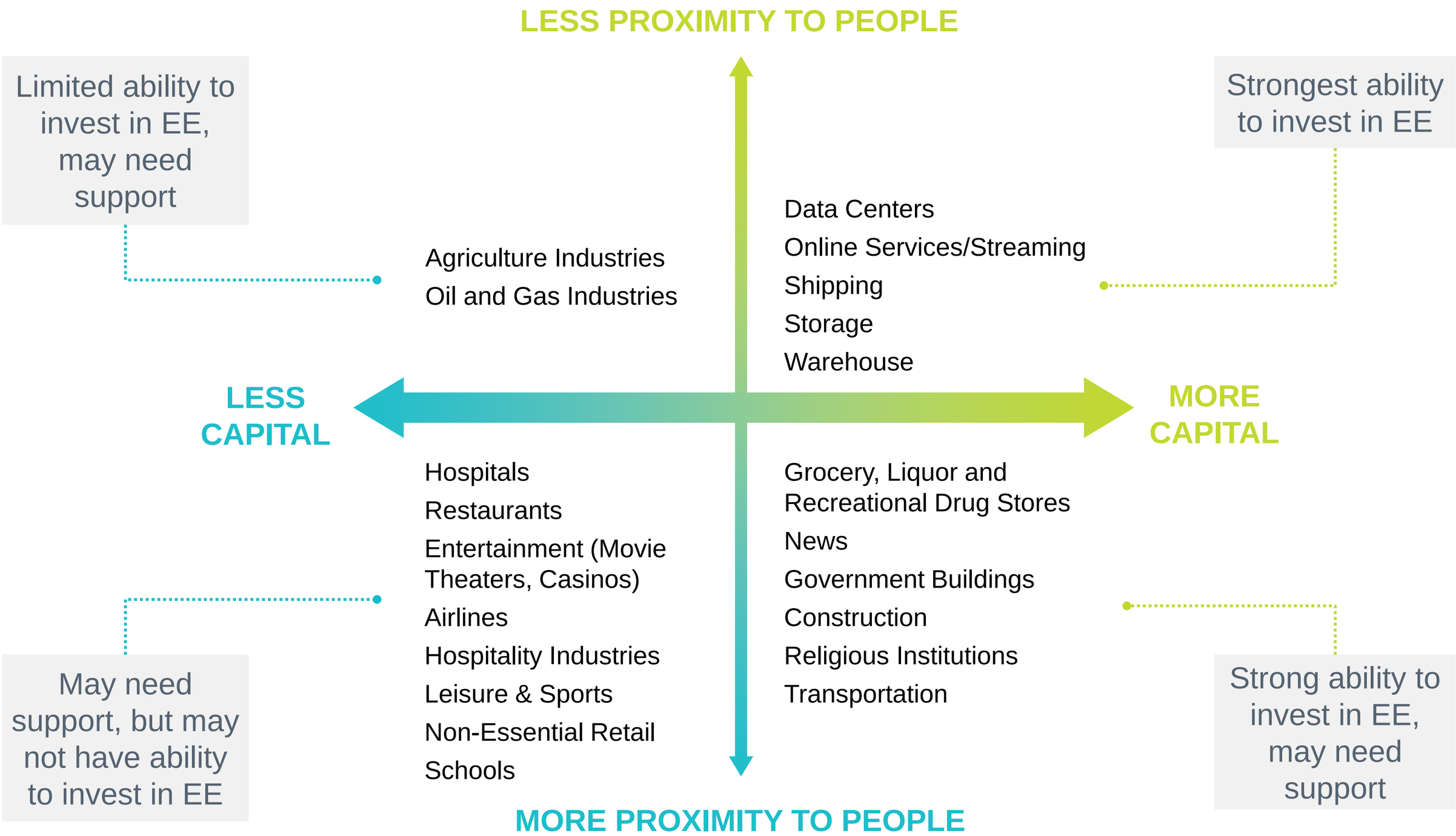
(Source: hancockagriculture.com)

Especially vulnerable are crops used for feed, fuel, and fiber

Food demand is more resilient

Transportation & aviation way down, car sales plummeted

Conclusions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Who will invest in EE?

High capital, low population density

Online or remote

Storage (data or physical)

Warehouse & shipping

Publicly funded and institutional industries

Industries with reliable funding sources

Essential industries with high proximity

Higher need for incentives for those without capital

Make programs a resource for markets that are struggling

(especially HVAC technologies)

Who will need more support?

Businesses that have lost revenue

Restaurants, Entertainment, Hospitality, Leisure

Non-Essential Retail

Schools

High proximity industries

HVAC upgrades will be attractive, but maybe financially out of reach

Questions?

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Appendix

Research Methods

Industry Publication Articles

Professional Org Surveys

Ad hoc Interviews

Empirical Data from ConstructConnect

Two Big-Picture Assumptions

- Industries hit hardest by COVID-19 will have less capital to invest in the period following the onset of COVID-19
  - "Once 'normal' operations resume, virtually every restaurant in this country, from the favorite diner to the local icon, will be a virtual startup in desperate need of cash." (Source: marketwatch.com)
- Some level of social distancing or other restrictions will be in place for at least 12 months after the onset of COVID-19
  - "According to a group of Harvard disease experts, some form of intermittent social distancing may need to be in place until 2022." (Source: weforum.org)

Retrofit May Rebound Faster than NC

New Construction outlook predicts downturn

- New construction carries greater financial risk, and many projects are on hold
  - In the HARDI study, 33% of participants from the U.S. Western region indicated that commercial new construction has been faring below normal

Retrofit market appears to be rebounding already (Source: globest.com)

- Real Estate owners reported being “busier than ever” retrofitting their property
- Commercial buildings need to be maintained when vacant
- Vacant buildings provide opportunity for improvements