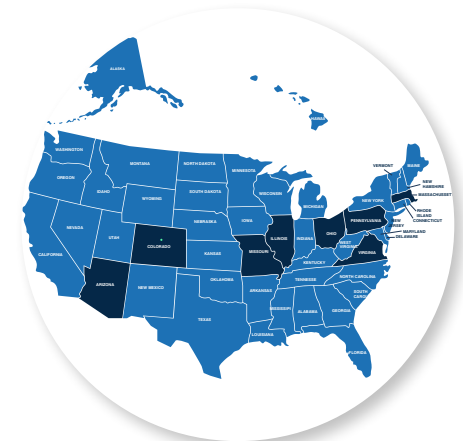# IRON MOUNTAIN®
DATA CENTERS

INFRASTRUCTURE PLANNING REPORT

NORTH AMERICA – DENVER

CONTENTS

Iron Mountain Data Centers (IMDC) has compiled this Infrastructure Planner to give you a balanced overview of key colocation markets - their strengths and weaknesses, and the latest issues and opportunities.

IRON MOUNTAIN®
DATA CENTERS

NORTH AMERICAN **INFRASTRUCTURE**

2020 to 2030

NORTH AMERICA colocation forecast CAGR

10.9%

NORTH AMERICA
Colocation **MARKET VALUE**

50B

40%

of total colo spend in **2022 = $20 BN**

Source: CBRE Research. CBRE Data Center Solutions H1 2022

North America is the highest revenue contributor to the $50 BN+ global data center colocation market, accounting for around 40% of demand. The North American market is forecast to exceed the current global value of $50 BN by 2030, with a CAGR of 10.9%.

The U.S. is the main driver of North American growth. The bulk of data center infrastructure is located in seven key hotspot markets - Northern Virginia; Dallas; Silicon Valley; Chicago; Phoenix; New York Tri-State; and Atlanta. Secondary markets with growth potential include Austin, Houston, Seattle, Denver, Minneapolis and Hillsboro.

KEY DRIVERS
Digital transformation, the growing adoption of multi-cloud, and network upgrades to support 5G are critical drivers of this growth, as well as the rapid expansion of hyper-scalers. User requirements are growing in both size and number and prices are rising as a result (2022: +5.9%).

On the wholesale/hyperscale side, major deals of 60 MW and above are becoming common. This is affecting the retail colocation market. As demand accelerates, space availability is becoming tighter and pre-leasing is becoming more widespread in primary markets to avoid potential capacity bottlenecks down the line. As a result, vacancy rates in the primary markets dropped to a record low of 3.8% in 2022.

THE **DENVER** MARKET

Denver is in an excellent strategic location, situated on the eastern slopes of the Rocky Mountains, at the convergence of multiple Interstate Highways and fiber routes. This makes it a natural point of interconnection for data and goods in the central United States and attracts transport, logistics and aviation businesses as well as ICT firms and infrastructure.

It is also an extremely reliable data center location, with a low risk of natural disasters. Plus the Mile High City's altitude gives it a fairly cool climate which allows operators to increase energy efficiency by offering free cooling for most of the year.

Denver is one of the second tier US data center markets. Originally a west coast disaster recovery (DR) backup site, its growth has been driven by home-grown demand from a wide variety of local and regional businesses, with additional investment from several global players.

ECONOMIC DRIVERS
The local economy is doing well, feeding this infrastructure growth. With a GDP of nearly US$200 billion, Denver is widely regarded as one of the fastest-growing 'tech meccas' in the USA. Lead industries are transport, technology, telecoms, aerospace and agriculture. The financial services sector is also strong - Denver is the largest financial center between Los Angeles and Chicago. And there are a lot of local tech start-ups thanks to regional incubator programs. Denver is a popular central site for core enterprise colocation: Firms that use it for this include Lockheed Martin, Time Warner, Nissan and Honda. And it is a central hub for large tech companies including IBM, HP and Oracle. All of these industries need an increasing amount of data center space.

RECORD-BREAKING GROWTH
Driven by this demand, Denver ranked among the top 10 most active U.S. markets for data center leasing in 2021, according to CBRE. The Denver market recorded 8 MW of data center space take-up in 2021, a 299% increase on the previous year. This was a faster growth rate than any of North America's 17 key data center markets has ever achieved.

Iron Mountain Data Center presence in North America

ISSUES & **OPPORTUNITIES**

Denver is a reliable and increasingly popular site for mission-critical infrastructure, with a mix of data center developments and growing access to renewables.

LOW DISASTER RISK
Although there are risks, they are a great deal lower than in other tornado-prone central markets, or in west coast markets with higher earthquake risks, making Denver a low-risk metro area in terms of natural disasters.

There is a slight risk of seismic activity, although most earthquakes in Denver occur in the 3.5 to 4.5 magnitude range. Heavy precipitation recently led to flooding in Boulder, but the mountainous region is well-protected against hurricanes and tornadoes. The eastern plains lie on the far western edge of 'tornado alley', which gives that specific area a higher than average tornado risk. However, no tornadoes above EF2 have ever come within 40 miles of Denver.

STRONG EDGE POTENTIAL
As AI and IoT take off, secondary data center markets like Denver look likely to attract increased infrastructure investment to enhance network density and storage capacity in order to support new 5G-based data and analytics applications for consumers and business.

MIXED DEVELOPMENT ZONES
Data centers in Denver are concentrated in two main metropolitan areas - downtown Denver, and the southern suburb of Centennial. Most of Denver's downtown data centers are located in retrofitted buildings, while most of the purpose-built data centers are located in the surrounding suburbs.

GROWING SUSTAINABILITY
While the majority of Colorado's fuel mix still comes from coal and natural gas, renewable generation is rising fast to support Governor Jared Polis's campaign to achieve a 50% reduction in greenhouse gas emissions by 2030 and run the state on 100 percent clean energy by 2040. Wind and solar accounted for 30% of the state's total generation in 2020.

POWER & INTERCONNECTIONS

GREENING THE GRID

Denver's power rates are moderate. Local provider Xcel offers incentive programs for data centers which deploy energy-efficient systems, so it is worth researching rates per provider. Wind and solar contracts are also likely to become more attractive as Colorado's green grid expands.

CONNECTIVITY

Denver is a major US fiber hub, acting as a central relay point that connects West Coast backbones and end users to major Midwest and East Coast markets. Long haul interstate lines connect it to Chicago, Minneapolis, Dallas, Kansas City, Phoenix, Salt Lake City, Seattle, Portland, San Francisco, Los Angeles, and San Diego. Its long-haul routes also create an international hub with links to Canada to Mexico.

This strategic importance is reflected in local infrastructure development. AT&T and Sprint have invested heavily in their networks and Verizon used Denver as a testing ground for its commercial 5G offering. It is also worth noting that the area is HQ for numerous leading telecom and data center operators including CoreSite, CenturyLink/Level 3, EdgeCore, and Zayo.

LATENCY

Denver's location on the mid-point between San Francisco and Chicago means consistent east-west and north-south traffic latencies to key metros including 26 ms to San Francisco and the same to Chicago; 35 ms to Los Angeles; 24 ms Dallas; 25 ms to Houston; and 28 ms to San Jose.
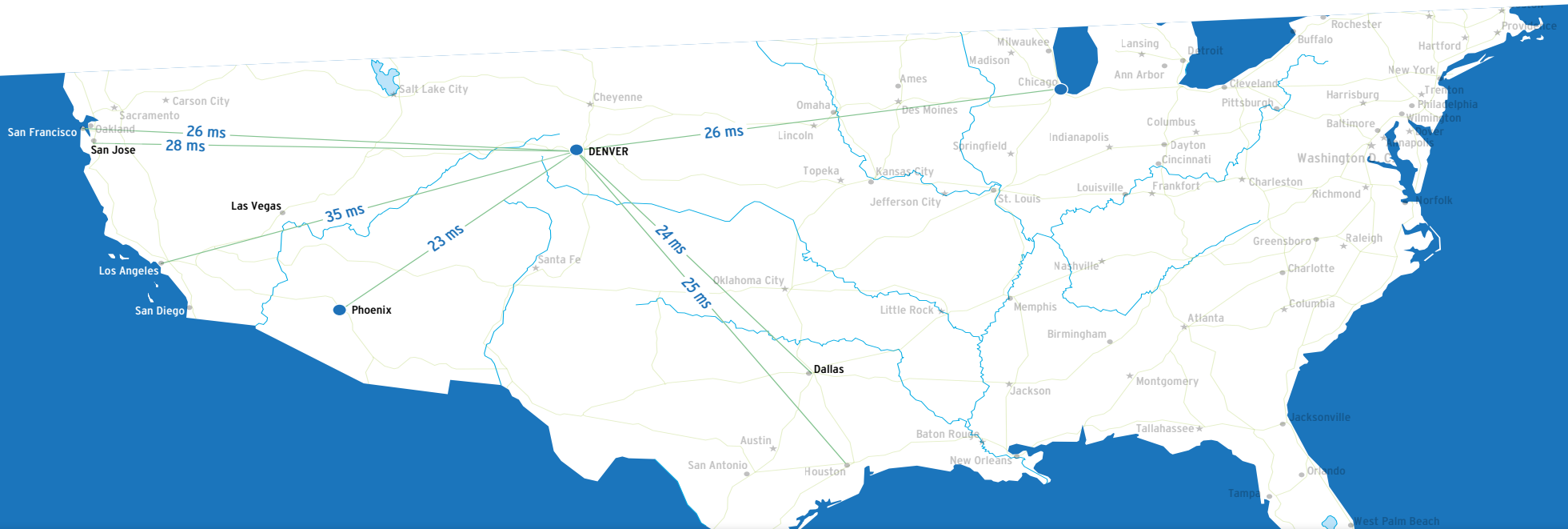
IRON MOUNTAIN DATA CENTERS
IN DENVER

IMDC operates one of Denver's leading colocation facilities. IMDC DEN-1 has the largest customer ecosystem of any data center in Denver, and one of the longest continuous uptime streaks in the world – more than 17 years.

DEN-1

Located on a 6-acre campus just 10 minutes east of downtown Denver, IMDC DEN-1 is a purpose-built facility with 14.4 MW of power capacity and 180,000 square feet of premium data center space.

The data center is Tier III-certified, with N+1 redundancy and the highest levels of security and compliance.

DEN-1 is a sustainable data center, with 100% renewable power and a design PUE as low as 1.2. It houses over 240 businesses, the largest and most active ecosystem in Denver, for low-latency/no latency interconnection with partners and providers.

In-house connectivity options include an exceptionally broad selection of Network Service Providers, Virtual Networks and Cloud On-Ramps.

ABOUT IRON MOUNTAIN DATA CENTERS

Iron Mountain Data Centers operates a global colocation platform that enables customers to build tailored, sustainable, carrier and cloud-neutral data solutions. As a proud part of Iron Mountain Inc., a world leader in the secure management of data and assets trusted by 95% of the Fortune 1000, we are uniquely positioned to protect, connect and activate high-value customer data. We lead the data center industry in highly regulated compliance, environmental sustainability, physical security and business continuity. We collaborate with our 1,300+ customers in order to build and support their long-term digital transformations across our global footprint, which spans three continents.

IRONMOUNTAIN.COM/DATA-CENTERS

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