

India Warehousing Market Report



2023

With warehousing demand sustaining at record levels, this sector is poised to take a quantum leap to match its more mature peers around the world.

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Foreword



Shishir Baijal
Chairman and Managing Director

With India emerging as the fastest growing large economy in the world, business activity across the country is moving firmly along the recovery path. The real estate sector has also rebounded over the past year but the scale of recovery is varied across the various segments of real estate. The warehousing sector in particular has been a standout performer. The sector was comparatively less impacted by the pandemic and scaled new highs in terms of annual demand as soon as it emerged from under the pandemic's shadow.

While the sector's breakout performance is a more recent phenomenon, the foundation for the next stage of the logistics and warehousing industry's evolution was laid in 2017 with the implementation of the Goods and Services Tax (GST). In the same year, the Central Government's grant of 'infrastructure status' to the logistics sector including warehousing, also proved to be a significant catalyst.

Traditionally the domain of unorganised players, warehouse development has increasingly attracted institutional participation over the past five years and accelerated the formalisation of the sector. The regulatory ecosystem has improved considerably with most states now having their own dedicated policies for the logistics sector. The occupiers' increasing adherence to compliance and sustainability has encouraged the development of Grade A warehouses in recent years.

We have observed strong demand for warehousing space along with great interest from the institutional and development side representing the suppliers of space and finance. The ever-increasing institutional interest in owning, developing and operating warehouse assets ensures that there is no dearth of professional expertise to direct the course of this growing market as it matures. Transaction volumes in FY 2023 have equalled the record breaking levels achieved in FY 2022 while

stock levels have exceeded 400 mn sq ft this year. Just Mumbai and NCR account for over half of this stock while other markets are gradually catching up. The overall vacancy levels stand at 12.2% while Grade A vacancy levels are at a much tighter 10%.

While speculative or strategic development has not taken off in the market since warehouse development timelines are short and customisations are harder to accommodate later on, its incidence has been increasing as developers and 3PL players try to woo occupiers with ready capacity, especially in secondary markets.

The pandemic was the single most disruptive event that had thrown the warehousing market off gear and led large occupier groups like e-commerce to build excess capacities due to the spike in demand seen during the period. Over the past two years, the dominant share of e-commerce occupiers in the warehousing market has given way to those from the manufacturing and retail sectors.

We trace the changing fabric of the market in this report and delve into the impact of this significant shift in balance among the occupier groups. While the shift in occupier groups might be significant, occupier needs and preferences regarding their warehousing requirements are also evolving. Taking cognisance of the underlying dynamics of the segment, we have identified key occupier themes that will be catalysts for the warehousing market in times to come. We have gathered great learnings while making this report and I am especially thankful to our industry stalwarts for contributing to this endeavour.

I hope that the report adds value to you and plays a part in your understanding of the Indian warehousing story. I look forward to your feedback and wish you and your loved ones safe and healthy times.



Key Occupier Themes

I. INCREASING FOCUS ON OUTSOURCING LOGISTICS AND WAREHOUSING OPERATIONS

- a) **Focus on core competence:** Businesses over the years have been gradually outsourcing their logistics and warehousing to 3PL players and this trend has only intensified over time. The increasing need to focus resources on core operations and optimise returns, has been the primary driver for this shift. Real estate is being increasingly viewed as a productivity enabler at the workplace, be it an office space or the warehouse. However, its efficacy as a productivity enabler demand a certain level of expertise or specialisation that businesses are increasingly cognizant of. While the co-working operator has claimed this space in the office market, it is the 3PL operator who has anchored the warehousing market over the years.
- b) **Flexibility and scalability:** With consumption trends changing constantly and newer markets opening up due to the spread of e-commerce, businesses have to be more agile than ever before. They need to be in a position to scale operations at short notice, to blitz markets they want to expand in or scale down from those they choose to withdraw from. This can only be made possible if there are ready warehousing options available in such markets. 3PL players have begun to build strategic warehousing capacities in such target markets to entice large corporate accounts into long term contract and logistics arrangements. A growing awareness that competitive advantage comes from the stocking and delivery process as much as it comes from the product, has been instrumental in catapulting logistics and warehousing from its traditional backroom activity to a strategic boardroom function.
- c) **Access to smart technology:** The pace at which technological innovations have changed the logistics and warehousing landscape has often left occupiers with dated processes that they have already committed investments to. However, occupiers can now have much better access to the latest technology in the logistics space via a specialist in the 3PL domain. Leading players in the 3PL sector have started automating processes to lower costs and improve efficiencies. Modern solutions powered by Artificial Intelligence (AI) and Internet of Things (IOT) are being applied to pick, package and move products across the supply chain, including inside the warehouse. Logistics conglomerates have already introduced AI and IoT powered solutions, and robotics for picking and packaging orders. AI and Machine Learning (ML) are already put to task for identifying and eliminating warehousing inefficiencies.

II. NEED FOR SUSTAINABLE WAREHOUSING

The trend of using sustainable practices is gaining traction and is arguably the single most important theme that dominates dialogues across business lines and geographies. Even investment flows are now heavily influenced by how sustainable practices are being applied by potential prospects. This all-pervasive theme has begun influencing the warehouse market with occupiers looking to reduce their carbon footprint and incorporate industry leading practices in the domain. With occupiers increasingly looking to outsource their logistics requirements and with end consumers demanding accountability, major occupier groups such as the 3PL and e-commerce players have begun to focus on this important aspect.

Like any other property type, the operation of warehouses uses energy, employs human and electronic resources, and utilises various building materials, all of which impact the environment to varying degrees. Climate control, lighting, and the operation of other facilities are all part of the equation adding up to total resource usage. Green warehousing refers to making updates that reduce the amount of energy used and tap into sustainable energy sources and materials, to minimise the amount of non-recyclable waste created during warehouse operations. Progress towards a greener warehouse can be measured in a tangible way by seeking building certifications that evaluate performance across metrics related to Environmental, Social, and Governance (ESG) criteria.

Some of the steps that can be taken towards green warehousing are as under:

- a) **Using green energy:** Most of a warehouse's energy requirements are fulfilled directly by the state's electricity distribution company. However, the larger Grade A warehouses are increasingly exploring the use of rooftop solar panels to supplement their overall energy footprint. With sufficient scale and time, this can prove to be significantly more economical than traditional options as this is a renewable source of energy which minimises emissions and the warehouse's carbon footprint.
- b) **Upgrading the lighting:** Good lighting is very important to ensure the safe and efficient operation of a warehouse. There is significant scope to reduce environmental impact of a warehouse by exclusively using light-emitting diode (LED) bulbs instead of the cheap fluorescent bulbs. Much like solar panels, occupiers with sufficient scale and longer tenure of operations have experienced that LEDs are much more cost-effective and have a smaller cost-footprint over time. Many warehouses today are designed to allow as much natural light as possible to minimise the use of electric lighting.

c) **Recycling packaging waste:** Packaging materials such as cardboard are among the most common form of waste that most occupiers must contend with in the typical Indian warehouse. Initiating a structured recycling program that redirects this by-product back into use instead of allowing it to simply go to waste, is a potent practice of green warehousing.

III. INCREASING NEED FOR LOGISTICS AND WAREHOUSING SERVICES IN THE SECONDARY WAREHOUSING MARKETS

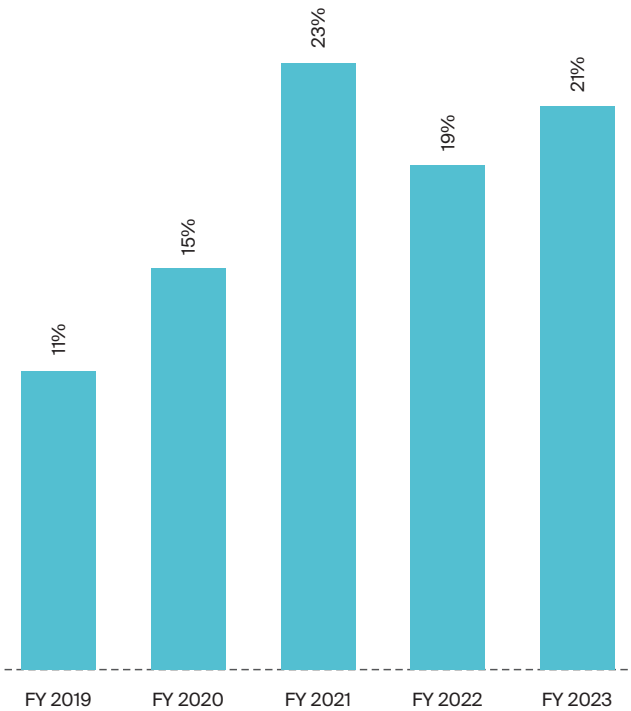
a) **Exploring new markets:** The consumption markets in the primary cities are becoming increasingly saturated as businesses compromise on margins and undercut competition to win over the increasingly demanding customer. The proliferation of e-commerce has revolutionized shopping behavior and opened up vast markets in the Indian hinterland. While corporate India is becoming increasingly aware of the potential of these untapped markets, the logistics and warehousing infrastructure required to service them is still evolving.

b) **Increasing share of secondary markets:** The share of secondary markets in the total transactions recorded in the country has grown consistently from just 11% in FY 2019 to 21% in FY 2023. Secondary markets accounted for 1.3 mn sq m (13.7 mn sq ft) of warehousing transactions during the year.

c) **Increasing share of 3PL sector in secondary markets:** 3PL companies have been increasingly scouting for viable properties and their share of transactions in the overall pie stands at a historic high of 34% in FY 2023. Businesses that are looking to expand in these markets have been exploring primarily through these 3PL operators. This enables them to avoid the capital investments which would be a significant drag on liquidity if their plans for the market do not pan out as expected.

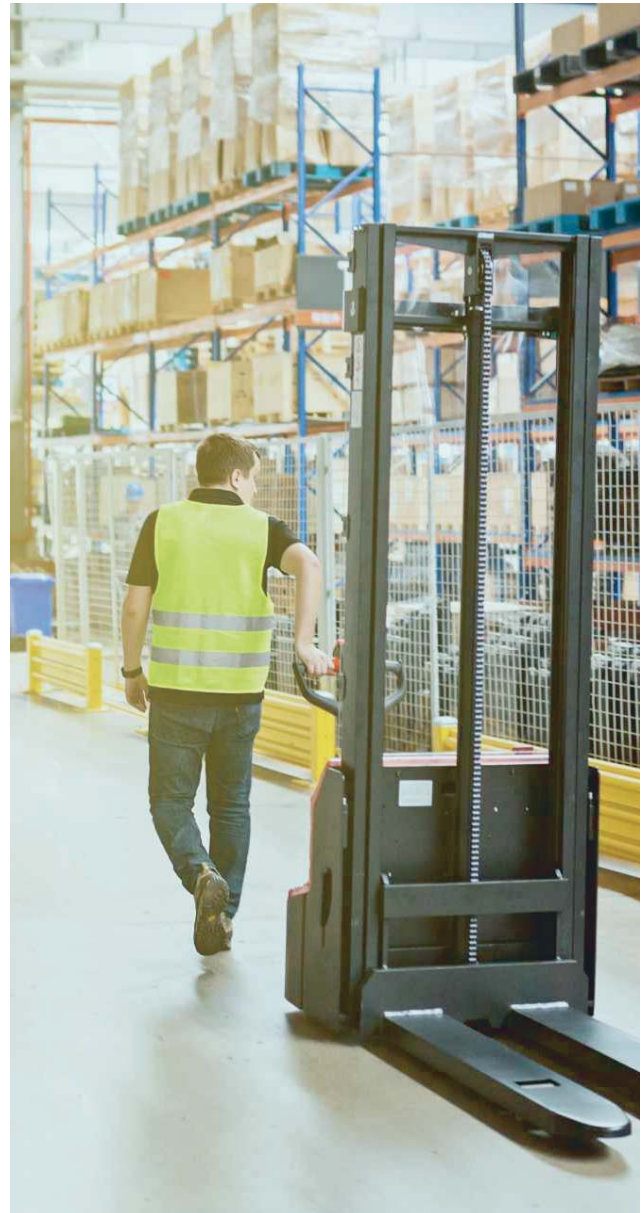
d) **Increasing annual growth in secondary markets:** The fact that transaction volumes in these secondary markets have grown 15% YoY in FY 2023, while the eight prime markets saw demand remain stable in YoY terms, underscores the increasing traction of these emerging warehousing markets.

Share of Secondary Markets



Source: Knight Frank Research

Note: The secondary market basket comprises 13 markets: Lucknow, Bhubaneswar, Coimbatore, Ambala-Rajpura Belt, Guwahati, Indore, Jaipur, Ludhiana, Patna, Visakhapatnam, Vadodara, Surat and Vapi.



COLD CHAIN WAREHOUSING IN INDIA

India has the largest population in the world today and the volume of food it requires is of monolithic proportions. In addition to producing substantial volumes of meat, seafood and poultry for its people, India is also the largest producer of milk and the second largest producer of fruits and vegetable in the world. According to the FSSAI (Food Safety and Standards Authority of India), one-third of all food in India is wasted or gets spoilt before it is eaten. A significant portion of this can be salvaged if steps are taken to fortify our cold chain logistics infrastructure attributed to the state of cold-chain logistics and warehousing in India.

According to government estimates, 92% of the cold chain facilities are owned and operated by the private sector. It is a fragmented industry and has little presence in many Indian states. Just Punjab, UP, West Bengal and Gujarat account for 60% of the cold chain storage capacity in India.

Cold chain warehouses are among the most efficient users of the warehouse's floor area as they can effectively use the racking space which is a standard fixture of all warehouses. These racks are leased out to various FMCG and pharma companies in standard pallet sizes rather than by area, which is still popular among other occupier groups. Cold chain warehousing is currently estimated to account for approximately 3-5% of the total leased warehousing capacity in the top eight cities and is hence a small but significant niche within the warehousing market. Typically, cold chain operators rarely take up more than 100,000 sq ft in a single facility and pharmaceutical products constitute approximately 5% of the space taken up by cold chain operators.

Since cold chain operators have to make substantial investments in refrigeration, power and other storage infrastructure, they typically commit to long term leases which range between 10 - 20 years. From the operator's perspective, location is of far greater importance than the grade of warehouse as proximity to consumption centers has a direct impact on the overall costs which include transportation since the operator typically manages end-to-end logistics.

While the wastage in perishable foods has squarely been blamed on the shortcomings in the country's cold-chain infrastructure, our interactions with industry players indicated that these shortages can be avoided to a great extent if the food can be processed at source and then enter the supply chain. This is being accomplished in some cases, such as the potato crop in Mehsana which gets processed almost immediately after harvest by companies such as McCain Foods and Hyfun Frozen Foods. This largely pre-empts wastage due to spoilage or storage.

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The nation's warehousing industry has witnessed an astonishing metamorphosis over the past few years, transitioning from traditional warehouse structures into a dynamic logistics and supply chain ecosystem. We anticipate that the paradigm shift in consumer behaviour will continue to lead to an expansion of the e-commerce market. With the expanding formalisation of other industries like retail and FMCG, we expect, this will be further established. Again, there will be a rise in the need for last-mile delivery options. To meet this need, companies offering warehouse solutions are aggressively looking into new markets and investing in cutting-edge infrastructure, which is enabling them to expand.

With the rapid growth of built-to-suit facilities and smart warehouses, we can expect a surge in the adoption of automation and robotics. These will enable operators to enhance efficiency, reduce costs, and provide seamless order fulfilment across various industries. Inventory management will further change and become more efficient when artificial intelligence and machine learning are integrated.

Additionally, there has been a lot of government backing. We are embracing the momentum and the new prospects it brings, which includes a specific request in the Union Budget 2023–24 to increase the capital investment outlay by 33%. We are optimistic that the warehouse business will continue to prosper in the upcoming year and beyond with the unwavering dedication to innovation, customer-centricity, and adaptability - a growth fuelled by foreign investments, new market penetration, and rising demand for logistics services.

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Rajesh Jaggi
Vice Chairman, Real Estate
Everstone Group



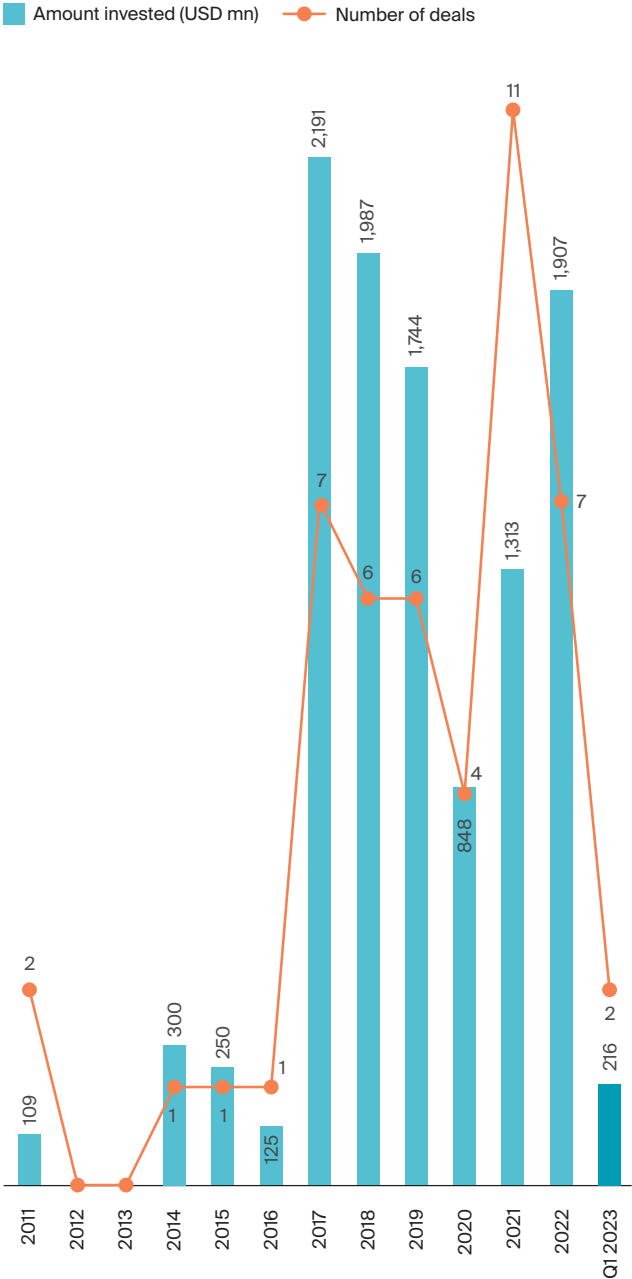
Institutional Investment Dynamics In The Indian Warehousing Sector

The rapid expansion of the logistics industry in India over the past few years has been facilitated by factors such as the e-commerce boom, rising disposable incomes, and the government's focus on infrastructure development. In 2022, warehousing continued to emerge as the most sought-after sector for investment, despite other sectors experiencing slowdown as investments dried up in the majority of sectors with investors postponing investments in response to escalating international tensions and concerns over rising inflation and interest rates.

Investments in logistics and industrial segments witnessed a robust growth in 2022 on the back of strong demand for this asset class supported by rise in automation, and increased demand led by third-party logistics. Private equity investors (including real estate funds, alternate investment funds (AIF), sovereign funds, pension funds, sector specific funds, and traditional private equity funds) have collectively invested over USD 1.9 billion in 2022, with an average investment per deal of USD 272 million. The annual investment volume increased by 45% YoY compared to USD 1.3 bn received in 2021.

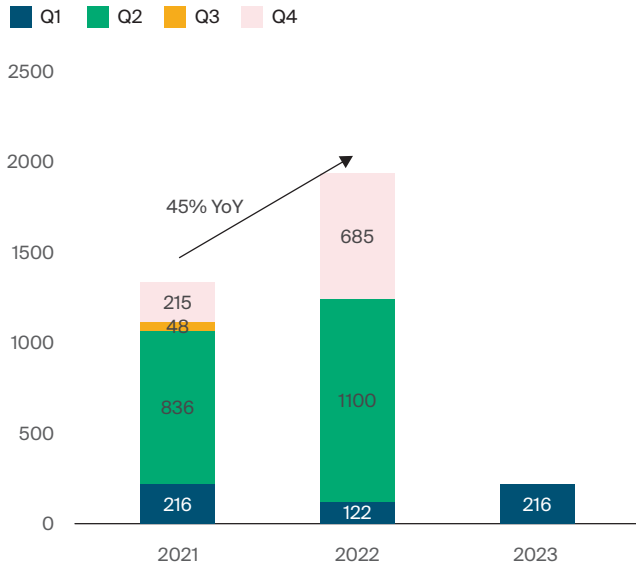
Since FY 2017, the warehousing industry has garnered second highest share in equity investments after office and much higher than retail. In 2022, office segments witnessed the highest equity investments around USD 2.5 bn, followed by warehousing at USD 1.9 bn, residential with USD 654 million and retail at USD 303 million. In Q1 2023 investments of USD 216 million have already been received in the warehousing sector, highest among all other sectors with USD 200 million received from one single deal.

PE investments in Warehousing



Source: Knight Frank Research, Venture Intelligence
Investments considered until Q1 2023

Robust growth in Warehousing segment

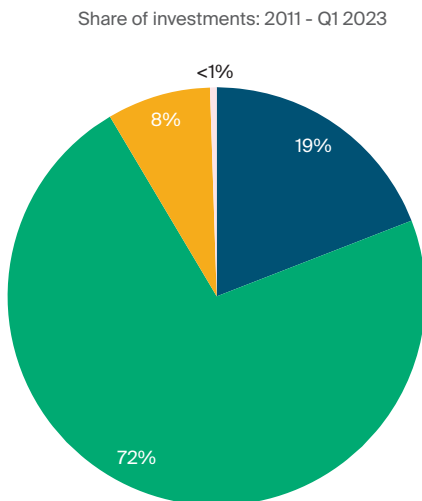


Source: Knight Frank Research, Venture Intelligence
Investments considered until Q1 2023

In comparison to office and retail assets, warehousing assets take less time to build (12 to 18 months). Because India's warehousing sector is so fragmented, there are limited, well-organized enterprises operating across the country, and acquisition expenses can have a major impact on investors' fund sizes. As a result, investors choose to create assets that are eventually worthy of REITs or secondary sale. As a result, 74% of warehousing investments since 2011 have gone towards greenfield / new development projects, with the remaining 17% are made in ready assets. Only 9% of the inflows were utilized to buy finished projects.

Lack of mature assets in India's Warehousing segment and shorter construction timelines post land acquisition make a strong case for greenfield investments

■ Mix ■ New development ■ Ready ■ Under-construction



Source: Knight Frank Research

The cost of constructing a good quality Grade A warehouse structure varies between INR 12,917–19,375 per sq m (INR 1,500–2,100 per sq ft) depending on the contour of land. The cost of land in India varies by a huge margin depending on the location and quality of infrastructure near the land parcel. If we consider the cost of construction (including the cost of land) for a warehouse in India, it is unlikely to exceed INR 26,910 per sq m (INR 2,500 per sq ft).

Cap rates have declined significantly in the previous decade

| Year | 2011 | 2022 |
|--|----------|---------|
| Select good quality rent-yielding warehousing assets | 13 – 15% | 7% - 8% |

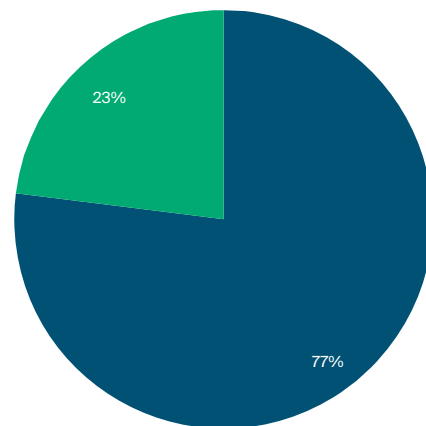
Source: Knight Frank Research

Compared to office and retail assets, there aren't many high-quality mature warehouse assets available in India. The high cap rates observed in the warehousing sector in 2011 were on account of low investor interest, a lack of mature high-quality assets, an unorganised industry structure, low demand for the services provided by the organised segment, and a lack of policymakers' motivation to assist the industry's expansion. However, as time went on, things began to fall into place for the warehousing industry and the cap rates decreased significantly over the last decade.

PE and long-term capital providers alike actively participate in creating new Warehousing assets

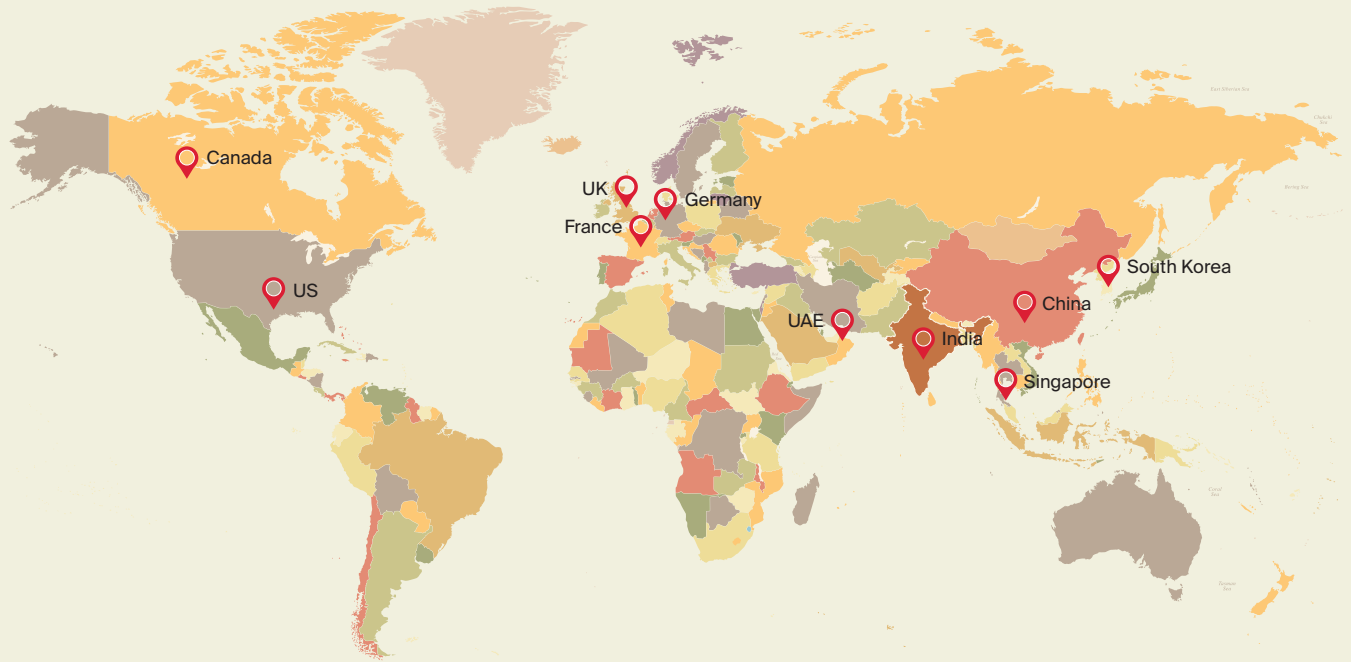
■ PE ■ Sovereign/Pension fund

Share of investments: 2011 - Q1 2023



Source: Knight Frank Research

Investors from Singapore and the US invested the most in Warehousing



| Investor origin | Amount invested (USD mn) | Number of deals |
|--------------------|--------------------------|-----------------|
| Singapore | 4,243 | 15 |
| US | 2,162 | 4 |
| UAE | 1,600 | 2 |
| Germany | 1,200 | 1 |
| Canada | 900 | 2 |
| India | 380 | 9 |
| South Korea | 200 | 1 |
| France | 150 | 1 |
| China | 100 | 1 |
| UK | 55 | 1 |
| Grand Total | 10,990 | 37 |

Source: Knight Frank Research

Note: The Grand Total represents investments announced from 2011 to Q1 2023.

The warehouse sector is a crucial part of business infrastructure, and India's attempts to become a major global manufacturing hub have bolstered the sector's importance. Indian logistics infrastructure is actively being invested in by foreign businesses

to benefit from the nation's favourable location and better business environment. Investments in this industry are anticipated to increase in the near future as foreign companies seek to take advantage of India's expanding logistics market.

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We continue to hold our views from our previous year's outlook with respect to manufacturing upswing, positive impact of road infrastructure and path breaking impact of internet-penetration; and consequent digital-led buying decisions. Further, we also expected the impact of PLI to reinvigorate manufacturing demand. All these critical themes are boosting the consumption from existing and newer pockets of geographies.

The year saw an all-time high velocity of manufacturing demand in the traditional GTM ('Gujarat, Tamil Nadu and Maharashtra') markets. We are also witnessing new states emerge with high digital adoption and/or a sizeable workforce such as Karnataka and Uttar Pradesh.

With ongoing diversification of global supply chain and geopolitical realignment, India has come out as one of the credible manufacturing locations given the right demographics with 2/3rd of population aged between 18 and 55 years.

We believe that private investment by established industrial houses and new-age manufacturing such as E-Vehicles and renewables have propelled the new demand. Vendor ecosystem have started to grow exponentially as the anchor sectors have made large commitments. We firmly believe that India is at the beginning of a 10 year run to attract global manufacturers including mega manufacturing establishments.

In spite of the global challenges investing in real estate, foreign investors maintain their confidence in India's Logistics and Industrial sector. This is primarily due to the supportive policies implemented by the government and the emphasis on quality demanded by occupiers. These give confidence for stronger returns in the long term, driven by rental growth.

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Mehul Shah
Chief Executive Officer
Logos India



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The Indian warehousing sector has experienced significant growth and transformation, driven by factors such as the expansion of e-commerce, infrastructure development, and regulatory reforms. The demand for modern warehousing facilities has surged due to the rise of organized retail and e-commerce. The implementation of the Goods and Services Tax (GST) has streamlined supply chains and established centralized warehouses near major consumption centers. Technological adoption, including automation and advanced inventory management systems, has improved operational efficiency. The government's focus on infrastructure development and the digital economy, along with the sector's potential for technological integration, sets the stage for long-term growth. 'The National Logistics Policy and the Gati Shakti initiative' by the Indian government are propelling the growth of the logistics sector, attracting global companies and creating a favorable investment environment. The Indian warehousing industry is poised for substantial growth, serving as a vital catalyst for the country's economic progress. We at Panattoni India are excited about the future prospects and remain committed to driving sustainable growth while fostering a vibrant ecosystem for all stakeholders involved.

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Sandeep Chanda
Managing Director India
Panattoni

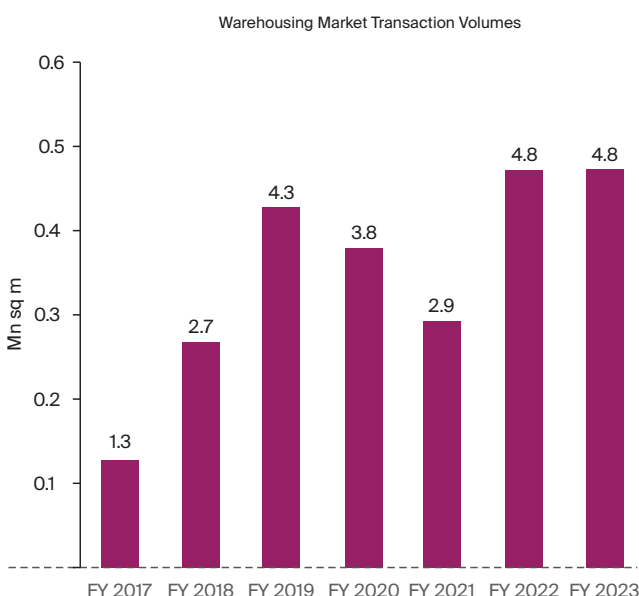
Warehousing Market Analysis

Annual demand analysis – Market and sector split

The warehousing market in India has long been considered an attractive investment opportunity, given the growing needs of a massive consumption market and the aggressive economic growth targets of the government. The focus on increasing the manufacturing sector's share of GDP to 25% by 2025 and transforming India into a global design and manufacturing hub via the 'Make in India' initiative is also a major driving force behind the interest in the warehousing market. While the investment rationale holds tremendous promise, the fledgeling warehousing market has seen demand falter in recent years due to economic sluggishness since FY 2020 and the COVID-19 pandemic in FY 2021.

However, a vast improvement in the vaccination rates and an increased understanding of the pandemic laid the foundation for a better-than-expected recovery in the general business environment. This sustained recovery has rendered India as the fastest growing large economy in the world by the end of FY 2023 with an estimated annual GDP growth of 7% for the year. With FY 2022 having achieved record transaction volumes, industry stakeholders doubted if FY 2023 would sustain the momentum, especially with the slowdown in demand from the prolific e-commerce sector during the year. Nonetheless, warehousing transaction volumes have matched the record levels achieved in FY 2022, as the 3PL and manufacturing companies filled the vacuum left by the e-commerce sector.

Robust growth in Warehousing segment

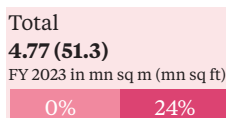


Source: Knight Frank Research

Warehousing market demand has sustained record highs of the previous year in FY 2023 compared to the office and residential markets which are yet to approach similar highs since the pandemic. 4.8 mn sq m (51.3 mn sq ft) of warehousing space were transacted during FY 2023, marginally higher by 0.1% YoY. NCR and Mumbai led the market in terms of overall transaction volumes during FY 2023. Mumbai, Bengaluru and Kolkata also scaled historic annual highs during the year.

Annual warehousing transactions

■ % Change FY 2023 YoY ■ CAGR FY 2017-23



Source: Knight Frank Research

The eight primary markets are split into 31 warehousing clusters and interestingly, over half of the area transacted in FY 2022 occurred in just six of these clusters in NCR, Pune, Mumbai and Kolkata.

While FY 2023 saw occupier demand sustain at the record levels seen in FY 2022, rents in most markets have maintained the upward trajectory they set in the previous year. Rent growth has been the bane of the market over the past decade with developers facing stiff resistance from occupiers who were extremely reluctant to cede any ground on this aspect. Inflationary trends in steel and cement caused by a supply crunch due to the pandemic and the more recent rate hikes left little choice for developers and operators but to increase rates over the past two years. This coincided with the strong demand seen during the period and maintained the market balance in favour of the developer, pushing up rents across seven of the eight primary markets in the range of 3-8% YoY during FY 2023.

Average Rents

| Market | FY 2022 INR/sq m/month (INR/sq ft/month) | FY 2023 INR/sq m/month (INR/sq ft/month) | YoY Change |
|-----------|--|--|---------------|
| Bengaluru | 215 (20) | 231 (21.5) | 8% |
| NCR | 203 (18.9) | 217 (20.2) | 7% |
| Ahmedabad | 174 (16.2) | 183 (17) | 5% |
| Mumbai | 238 (22.1) | 249 (23.1) | 4% |
| Kolkata | 238 (22.1) | 249 (23.1) | 5% |
| Pune | 258 (24) | 269 (25) | 4% |
| Chennai | 236 (21.9) | 242 (22.5) | 3% |
| Hyderabad | 215 (20) | 215 (20) | 0% |

Source: Knight Frank Research

The occupier preference for Grade A properties continued to remain strong with 58% of the volume transacted in FY 2023 being concentrated in this segment. The inherent operational efficiencies, adherence to safety standards and better contingency planning as a result of greater expertise of personnel due to higher institutional participation are some of the factors that continue to draw occupier interest. While transactions were lower than its 64% share in FY 2022, it must be noted that this is primarily due to the relatively lower supply of Grade A properties and more importantly, the drastic drop in demand from the e-commerce sector during the year.

Annual share of Grade A transactions



Source: Knight Frank Research

3PL and e-commerce players have always coveted the value additions that Grade A properties bring into their supply chain operations, and their high share of total transaction volumes have had a significant role to play in the sustained take-up seen in Grade A properties. However, the volume transacted by the e-commerce sector having fallen 71% YoY in FY 2023, has had a significant bearing on the consumption of Grade A spaces. E-commerce players had aggressively expanded since the advent of the pandemic in FY 2021 especially in the grocery and pharmaceuticals space and built up a lot of capacity in expectation of heightened demand. However, the demand spike seen during the pandemic did not sustain to the extent expected once normalcy returned as the pandemic subsided. E-commerce players are recalibrating their operations to match contemporary consumer demand and this is reflected in their current share. However, with consumer behaviour increasingly inclined to transacting on the internet, especially the younger generation, and excess capacities being taken up, e-commerce activity in the warehousing market is expected to regain traction in FY 2024.

In contrast to the e-commerce occupier group, manufacturing sector companies such as those from the automobile and engineering industries have seen significant growth in the market share of total transactions since the pandemic subsided, from 23% in FY 2021 to 27% in FY 2022. India has benefited from the sustained move towards decentralisation of manufacturing capacity from China, the most recent move being made by Apple, which now makes 7% of its iPhones in India compared to just 1% in 2021. Also, the government's focus on 'Make in India' and the Production Linked Incentive (PLI) scheme have started paying dividends and continue to boost the prospects of manufacturing industries in the country.

3PL players have been the most prolific occupier group fuelled by the increasing need for e-commerce logistics as well as the

strengthening trend of most companies increasingly preferring to outsource their logistics requirements to 3PL operators. The 3PL sector accounted for the highest market share among all occupier groups at 39% in FY 2023, the highest by any sector since FY 2017. 25% of the total space taken up by the 3PL sector in FY 2023 was located in Mumbai followed by the NCR at 23%.

With mobility restored to normalcy during FY 2022 as pandemic related fears abated, consumer demand rebounded in the hard format stores and this had a direct bearing on the warehousing space take-up of the retail sector. The sector's share spiked from 4% in FY 2021 to 11% in FY 2022 as retailers had to quickly add warehousing capacities to cater to the swift rise in demand. This

increase in demand has sustained in FY 2023 with retail sector occupiers taking up 13% of the total space transacted, attaining a new high for the sector.

13% of the volume transacted during FY 2023 was purely for industrial use i.e. their end-use involved some form of manufacturing activity from sectors like automobile, FMCG and FMCD. Among the top eight markets in India - Pune, Chennai and Ahmedabad are cities with a significant industrial base. The market for industrial-use properties is expected to gain traction gradually as the government's focus on increasing India's manufacturing heft starts to pay dividends.

Sector-wise share of transactions

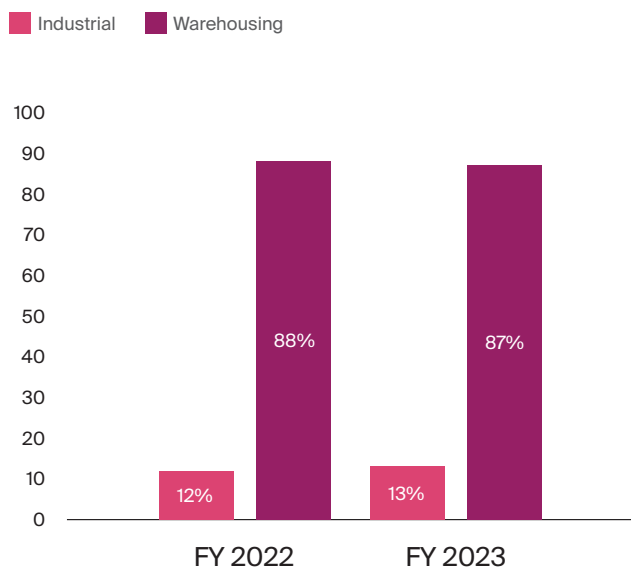
| Sector | FY 2017 | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 |
|---------------|---------|---------|---------|---------|---------|---------|---------|
| 3PL | 15% | 35% | 36% | 35% | 31% | 29% | 39% |
| Other Sectors | 30% | 21% | 21% | 23% | 23% | 28% | 30% |
| Retail | 10% | 12% | 11% | 8% | 4% | 11% | 13% |
| E-commerce | 18% | 14% | 24% | 23% | 31% | 23% | 7% |
| Miscellaneous | 4% | 4% | 1% | 3% | 1% | 4% | 5% |
| FMCD | 14% | 6% | 3% | 4% | 5% | 3% | 4% |
| FMCG | 10% | 7% | 4% | 4% | 5% | 2% | 3% |

Source: Knight Frank Research

Notes:

- Warehousing demand data includes light manufacturing/assembly.
- Other Sectors include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.
- Miscellaneous category includes services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Source: Knight Frank Research

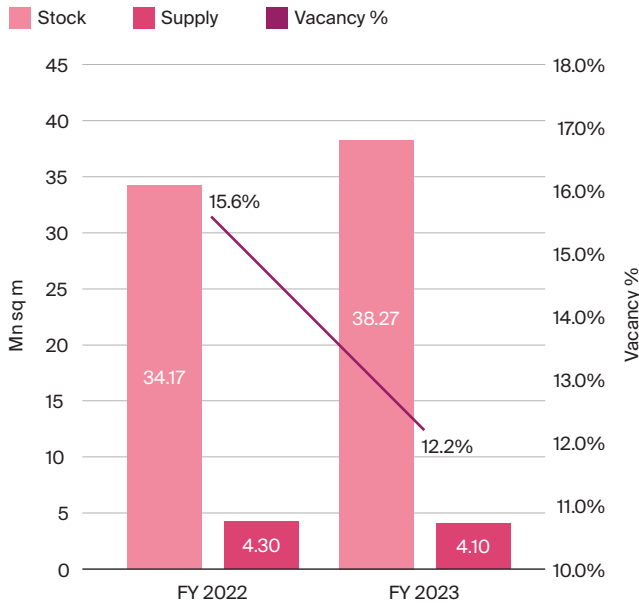
Note: Warehousing transactions: These refer to storage activity.
Industrial transactions: These refer to manufacturing activity.



Stock and supply – development potential assessment

Knight Frank has conducted a ground-up survey of warehousing stock in the top eight markets of India to arrive at an assessment of the supply scenario that exists in the market today. The eight primary markets of India held an estimated 38 mn sq m (412 mn sq ft) of warehousing stock at the end of FY 2023. The Mumbai market accounted for 34% of this stock and along with NCR, constituted 52% of the total stock. Strong transaction volumes, in tandem with comparatively lower supply in FY 2023, have brought down the vacancy level to 12.2% during the year. Vacancy levels in the major markets of Mumbai, NCR, Bengaluru, Pune and NCR have dropped significantly compared to the previous year.

Warehousing market stock, supply and vacancy



Source: Knight Frank Research

The development of Grade A warehousing facilities has continued to increase in recent years, and currently constitutes 40% of the total stock compared to 38% in FY 2022. The larger warehousing markets of Mumbai and NCR have a significantly lower proportion of Grade A warehouses as they are much older markets, and a bulk of their stock had been built before the demand for Grade A warehousing gathered momentum. Pune and Chennai have the highest concentration of Grade A stock due to their primary demand base of auto and auto ancillary occupiers.

The rising trend of Grade A development continued to gain momentum in FY 2023 with developers increasingly focusing on higher grade park development compliant to contemporary norms and the higher throughput requirements of businesses today. In addition to the emerging focus on sustainable development, there is an increasing need for improving the aesthetics of these warehousing parks and enabling a better working environment. 59% of the supply coming online in FY 2023 across the eight primary markets was in Grade A properties compared to 55% in FY 2022. Six out of the eight markets have seen the share of grade A stock increase in FY 2023 compared to the previous year.

Share of Grade A stock

| Market | FY 2022 | FY 2023 |
|--------------|------------|------------|
| Chennai | 77% | 75% |
| Pune | 70% | 73% |
| Kolkata | 59% | 48% |
| Hyderabad | 54% | 46% |
| Bengaluru | 40% | 45% |
| NCR | 36% | 40% |
| Ahmedabad | 32% | 35% |
| Mumbai | 17% | 20% |
| Total | 38% | 40% |

Source: Knight Frank Research

Warehousing stock and vacancy

| Market | Existing Stock mn sq m (mn sq ft) | Vacancy FY 2022 | Vacancy FY 2023 |
|--------------|-----------------------------------|-----------------|-----------------|
| Mumbai | 13 (139) | 14.0% | 10.3% |
| NCR | 7 (75) | 13.8% | 9.7% |
| Chennai | 3.8 (41) | 14.1% | 16.7% |
| Bengaluru | 3.4 (37) | 28.2% | 15.8% |
| Kolkata | 3.2 (34) | 10.4% | 19.9% |
| Ahmedabad | 3.2 (34) | 14.1% | 10.8% |
| Pune | 2.8 (30) | 15.9% | 11.6% |
| Hyderabad | 2 (22) | 15.9% | 18.1% |
| Total | 38.3 (412) | 15.6% | 12.2% |

Source: Knight Frank Research

Vacancy split by grade

Grade A Vacancy

| Market | FY 2022 | FY 2023 |
|-----------|---------|---------|
| Hyderabad | 9.0% | 4.7% |
| Bengaluru | 13.0% | 5.5% |
| Pune | 10.2% | 6.3% |
| NCR | 11.6% | 8.2% |
| Mumbai | 12.0% | 10.9% |
| Chennai | 10.7% | 12.6% |
| Ahmedabad | 17.0% | 15.2% |
| Kolkata | 8.0% | 15.2% |
| Total | 13.0% | 9.5% |

Grade B Vacancy

| Market | FY 2022 | FY 2023 |
|-----------|---------|---------|
| Hyderabad | 24.0% | 29.7% |
| Bengaluru | 38.0% | 24.0% |
| Pune | 29.5% | 25.6% |
| NCR | 15.1% | 10.6% |
| Mumbai | 14.0% | 10.2% |
| Chennai | 24.0% | 28.9% |
| Ahmedabad | 13.0% | 8.5% |
| Kolkata | 13.2% | 24.2% |
| Total | 17.8% | 14.0% |

Total Vacancy

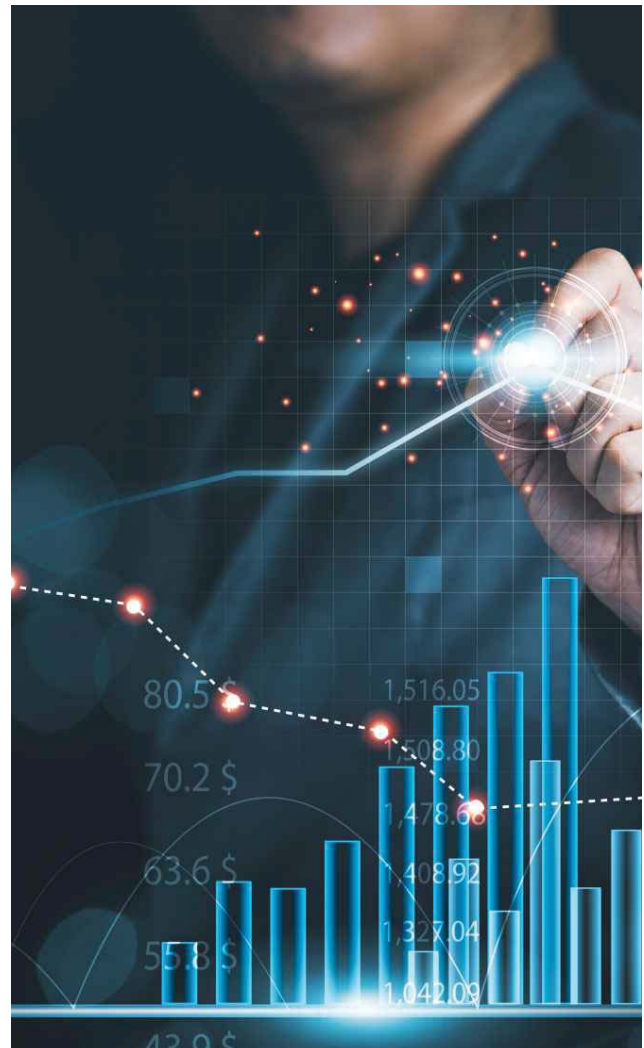
| Market | FY 2022 | FY 2023 |
|-----------|---------|---------|
| Hyderabad | 15.9% | 18.1% |
| Bengaluru | 28.2% | 15.8% |
| Pune | 15.9% | 11.6% |
| NCR | 13.8% | 9.7% |
| Mumbai | 14.0% | 10.3% |
| Chennai | 14.1% | 16.7% |
| Ahmedabad | 14.1% | 10.8% |
| Kolkata | 10.4% | 19.9% |
| Total | 15.6% | 12.2% |

Source: Knight Frank Research

Vacancy in Grade A properties is considerably lower than the total vacancy for the eight primary markets under coverage and has continued to reduce for the eight markets in FY 2023. In contrast to Grade A vacancy which is now in single digits at 9.5%, that of Grade B is currently at 14%. The supply of grade A properties has not been able to keep up with the continuously strengthening demand and current single digit vacancy across the top eight cities could stymie occupier demand in subsequent years.

Approximately USD 10.2 bn have been committed by private equity players in the warehousing market since the GST reforms were applied in 2017. The relative dearth of supply of high-quality warehousing facilities that conform to contemporary compliance norms, continue to be a challenge. The availability of suitable land at reasonable prices is the biggest impediment in creating new supply as land parcels with clear title continue to be scarce and digitisation of land records which can address this issue, is still a long way from becoming a reality. Bhiwandi and the Nashik Highway in the Mumbai market are a case in point where there is very strong occupier demand but issues with land titling curtail institutional interest.

While inflationary worries in the global economy are causing concerns in the economy, the aggressive rate hikes undertaken by the central bank have proved effective in controlling inflation. While the global economic environment will impact businesses in India, our relatively healthier fiscal position and gradually improving economy should support the warehousing market in FY 2024. With the 3PL sector anchoring the market and manufacturing sector coming into its own over the past two years, overall occupier demand has sustained on its elevated trajectory despite the e-commerce sector's reticence during the period. However, our interactions with market stakeholders suggests that the sector is well on its way to make a comeback in the market, possibly in FY 2024 itself.



“

India presents significant opportunities for Grade A Warehousing, driven by anticipated growth across various industry segments in the next 3-4 years. Tier II and Tier III markets, with a substantial supply-demand gap for Grade A warehousing, hold immense potential. Compliance, construction quality, park infrastructure, and additional amenities will facilitate the transition from existing Grade B to Grade A spaces, meeting the expectations of tenants and companies seeking international standards.

Grade A warehouses offer tangible advantages like increased floor-load capacity, operational efficiency, material handling space, employee safety, security, and adherence to international compliance. ESG, sustainability, and environmental impact ratings will soon become prerequisites for international and multinational companies, necessitating features like solar power, EV charging stations, and rainwater harvesting pits. India, with its youthful population of 1.4 billion and the government's robust infrastructure push, particularly in road and expressway connectivity, is poised to become a leading destination for logistics investment and growth.

Tier II markets are expected to outpace Tier I markets due to extensive infrastructure development, making the hub-and-spoke model a reality.

This decade holds immense potential for the logistics sector, and its growth trajectory is just beginning.

”

Ashish Agrawal
Managing Director
Xsio^ Logistics Parks

Warehousing Markets

- Primary Market
- Secondary Market



AHMEDABAD

WAREHOUSING MARKET

- The warehousing clusters in Ahmedabad are concentrated in the western and southern parts of the city, connecting it to the major cities of Gujarat such as Rajkot and Vadodara. There are four major warehousing clusters in Ahmedabad: Aslali-Kheda, Changodar-Bagodara, Sanand-Viramgam and Chhatral-Kadi-Vithalapur-Becharaji.
- Aslali-Kheda and Changodar-Bagodara are in the southern part of Ahmedabad and are the larger, more established clusters, lying along the golden quadrilateral which is well connected to Mumbai; while the Sanand-Viramgam and Chhatral-Kadi-Vithalapur-Becharaji belts are located in the western part of the city and are relatively newer clusters.
- The Aslali-Kheda belt is one of the oldest warehousing clusters that lies on the Mumbai-Ahmedabad Highway capturing the maximum warehousing demand of 43% of the overall transactions in FY 2023. During the year, transactions pertaining to the manufacturing sector followed by the 3PL industry led the end-user demand in the Aslali-Kheda belt.
- The Changodar-Bagodara belt lies along the Rajkot-Ahmedabad Highway where the warehousing demand during FY 2023 also came largely from the manufacturing segment, followed by 3PL and retail segments. This belt is supported by good infrastructure and good quality 3x3 lane roads with divider separation. Several industries and manufacturing companies have their presence here due to the well-developed and planned eco system. New logistics and warehousing parks, well equipped with modern technology have come up on this belt and have helped increase occupier activity here. 31% of the transactions during FY 2023 took place in this belt.
- The Sanand-Viramgam and the Chhatral-Kadi-Vithalapur-Becharaji belts are primarily focused on the automobile sector with the presence of large automobile companies and their ancillaries. The Sanand-Viramgam cluster accounted for 16% of the transaction volume during FY 2023, while Chhatral-Kadi-Vithalapur-Becharaji cluster accounted for 10% of the overall transaction volume.
- The Ahmedabad warehousing market witnessed leasing volumes of 0.35 mn sq m (3.8 mn sq ft) during FY 2023 as compared with the

The Ahmedabad warehousing market witnessed leasing volumes of 0.35 mn sq m (3.8 mn sq ft) during FY 2023.

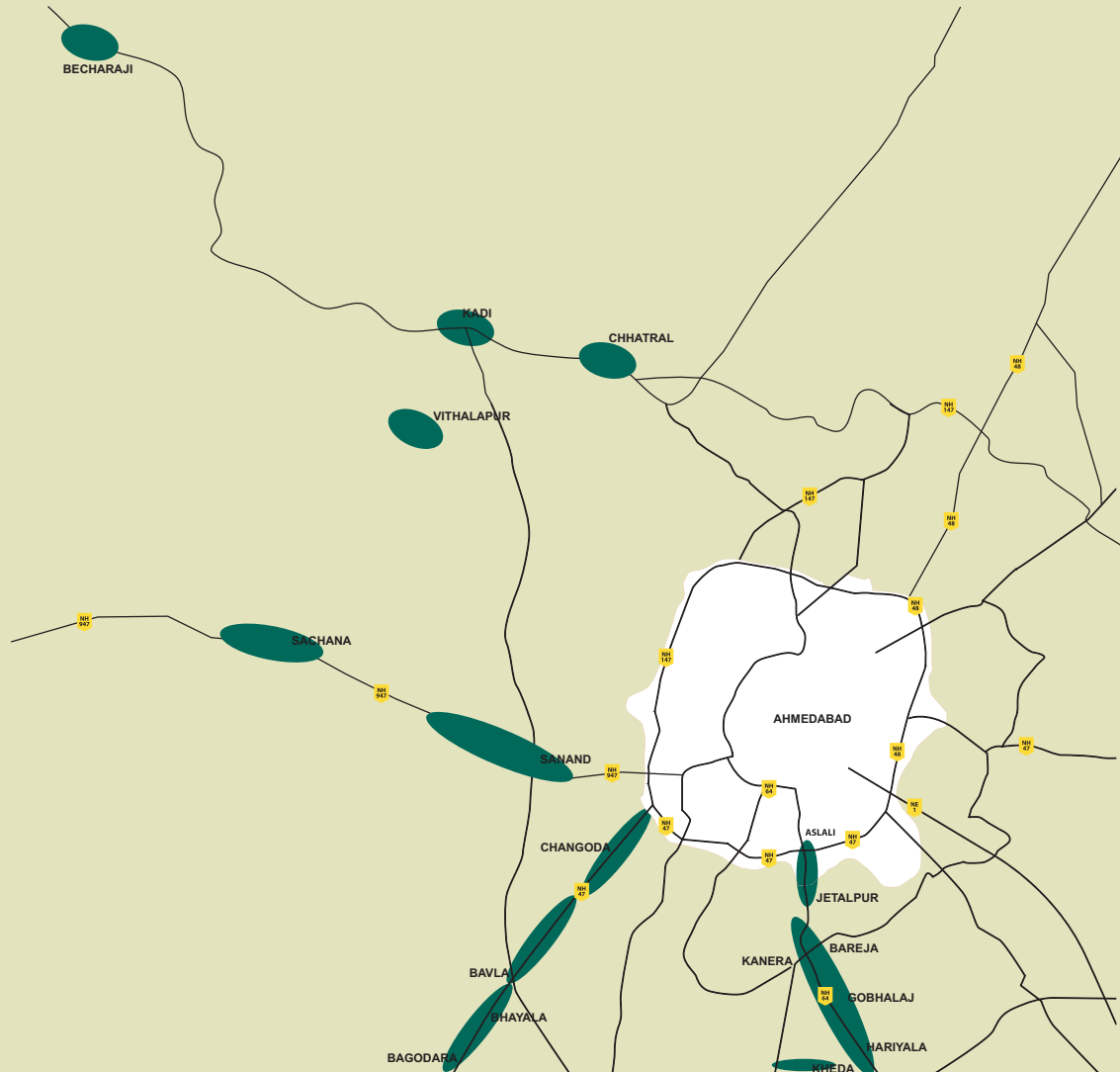
The manufacturing sector led the occupier pie accounting for 41% of the overall demand.

43% of the transactions concluded during FY 2023 took place in Grade A facilities compared with 36% in the preceding year.

0.50 mn sq m (5.3 mn sq ft) volume recorded during FY 2022. The fall in overall transactions can be attributed to the fall in spaces leased by FMCD and FMCG players. However, with the city being a manufacturing and industrial hub, the manufacturing sector led the occupier pie accounting for 41% of the overall demand followed by 3PL and retail sectors at 32% and 10% respectively. Transactions in the manufacturing space increased sharply by 17% YoY during FY 2023.

- Being an older market, however, Ahmedabad has several bottlenecks ranging from insufficient infrastructure support to high land prices and a lack of modern offerings, making it unviable for new warehouses to be developed in this area. 43% of the transactions concluded during FY 2023 took place in Grade A facilities compared with 36% in the preceding year.
- In FY 2023, the space take up was mainly driven by warehousing demand which garnered 76% share of the transactions as compared with the 92% during FY 2022. The industrial segment which undertakes various kinds of light to heavy manufacturing activities in warehousing parks accounted for 24% share of transactions, a significant increase as compared with the 8% recorded in the previous financial year.
- The rentals for Grade A spaces in the Aslali-Kheda belt range between 161-269/sq m/month (15-25/ sq ft/month), while ranging between 161-258/sq m/month (15-24/sq ft/ month) in the Changodar-Bagodara belt. The Sanand-Viramgam belt and the Vithalapur-Becharaji belt are comparatively affordable markets. The rentals for Grade A spaces in the Sanand-Viramgam belt range between 161-226/ sq m/month (15-21 /sq ft/ month), and between 172-215/sq m/ month (16-20/sq ft/month) in the Vithalapur-Becharaji belt.
- Land rates in the Aslali-Kheda cluster and Changodar-Bagodara cluster saw some level of appreciation during the year.
- Going forward, considering the push given by the Government of India towards manufacturing coupled with sanguine policies, demand for warehousing in Ahmedabad will be in the bright spot considering Ahmedabad is an established industrial base for chemicals, textiles, pharmaceuticals and food processing industries.

Major warehousing locations in Ahmedabad



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--|---|
| Aslali-Kheda cluster | Aslali, Jetalpur, Bareja, Kanera, Gobhalaj, Hariyala, Kheda |
| Changodar-Bagodara cluster | Changodar, Bavl, Bhayala, Bagodara |
| Sanand-Viramgam cluster | Sanand, Sachna, Viramgam |
| Chhatral-Kadi-Vithalapur-Becharaji cluster | Chhatral, Kadi, Vithalapur, Becharaji |

Source: Knight Frank Research

Major infrastructure in Ahmedabad

| Name | Type |
|---|------------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Manufacturing corridor |
| Western Dedicated Freight Corridor (DFC) | Railway |
| National Expressway-1 | Road infrastructure |
| Ahmedabad-Rajkot National Highway (NH-8A) | Road Infrastructure |
| Ahmedabad-Sanand-Viramgam State Highway (SH 17) | Road Infrastructure |
| SP Ring Road | Road Infrastructure |
| Mandar Bechraji Special Investment Region (SIR) | Industrial hub |
| GIFT City | Mega township |
| Dholera Special Investment Region (SIR) | Industrial hub |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--|------------------------------------|
| Prime Indraprasth Industrial and Logistics Hub | Aslali-Kheda |
| Temenos Logistic Park | Aslali-Kheda |
| Palladium Logistics Park | Aslali-Kheda |
| Indospace | Changodar-Bagodara |
| Gallops Industrial Park | Changodar-Bagodara |
| Crystal Indus Industrial and Logistics Park | Changodar-Bagodara |
| ESR Jalisana Industrial and Logistics Park | Chhatral-Kadi-Vitthlapur-Becharaji |

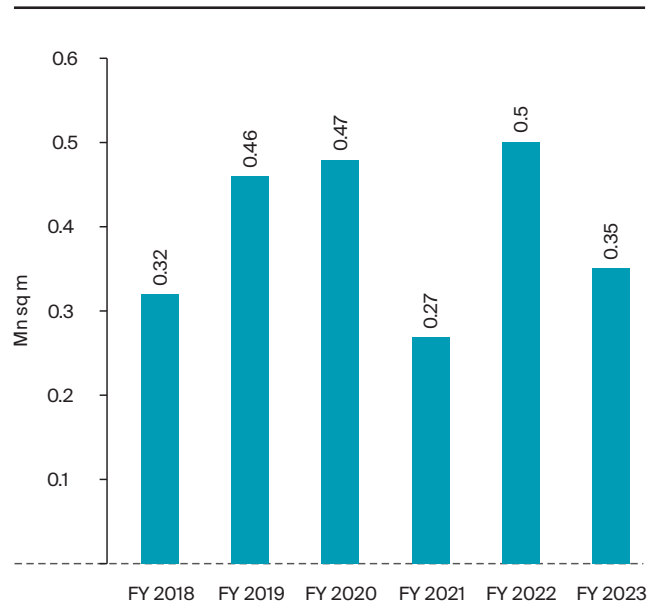
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|-----------------------|-------------------|----------------------|
| Tata Autocomp cluster | 3PL | Sanand-Viramgam |
| Havells | Manufacturing | Aslali-Kheda cluster |
| Croma | Retail | Changodar-Bagodara |
| Avira Naturals | Manufacturing | Changodar-Bagodara |
| VRL Logistics | 3PL | Aslali-Kheda Belt |

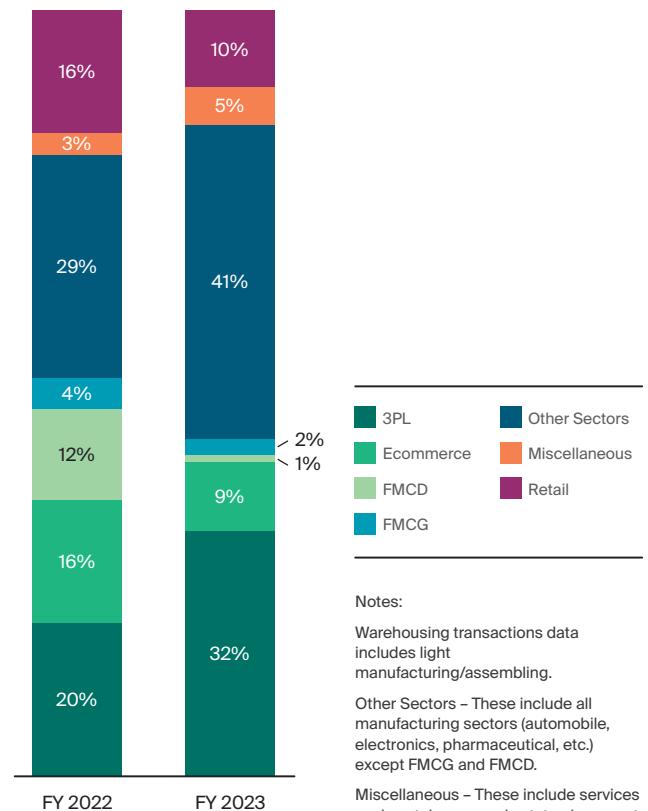
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Notes:

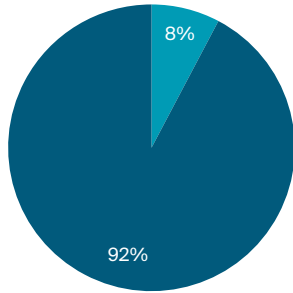
Warehousing transactions data includes light manufacturing/assembly.

Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

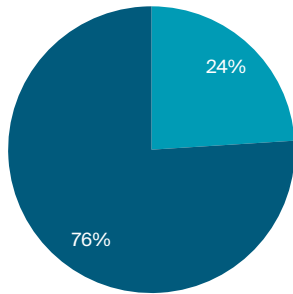
Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Source: Knight Frank Research

Transaction share by end-use of space



FY 2022

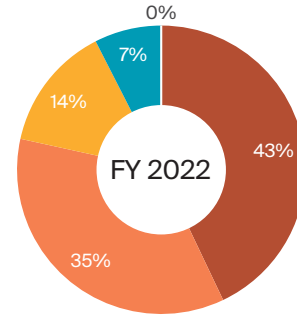


FY 2023

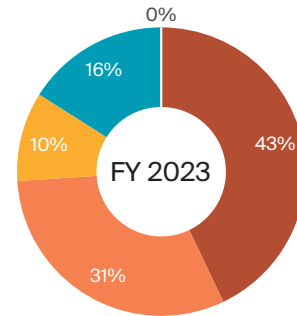


Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

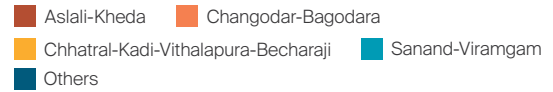
Cluster-split of transaction



FY 2022



FY 2023



Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|------------------------|------------|-------------------------|--|--|
| Aslali-Kheda | Aslali | 35-50 | 226-269 (21-25) | 172-215 (16-20) |
| | Bareja | 25-45 | 194-226 (18-21) | 161-183 (15-17) |
| | Kanera | 20-35 | 183-215 (17-20) | 161-183 (15-17) |
| | Gobhlaj | 20-35 | 129-215 (17-20) | 140-172 (13-16) |
| | Kheda | 15-30 | 161-194 (15-18) | 129-151 (12-14) |
| Changodar-Bagodara | Changodar | 40-60 | 215-258 (20-24) | 161-205 (15-19) |
| | Bavla | 25-35 | 194-226 (18-21) | 151-172 (14-16) |
| | Bhayala | 13-20 | 172-215 (16-20) | 118-161 (11-15) |
| | Bagodara | 8-15 | 161-205 (15-19) | 108-140 (10-13) |
| Sanand-Viramgam | Sanand | 16-30 | 194-226 (18-21) | 151-172 (14-16) |
| | Sachana | 12-20 | 161-194 (15-18) | 118-161 (11-15) |
| Vithalapur - Becharaji | Kadi | 12-18 | 172-215 (16-20) | 118-161 (11-15) |
| | Vithalapur | 8-15 | 172-215 (16-20) | 118-161 (11-15) |
| | Becharaji | 10-15 | 172-215 (16-20) | 118-161 (11-15) |

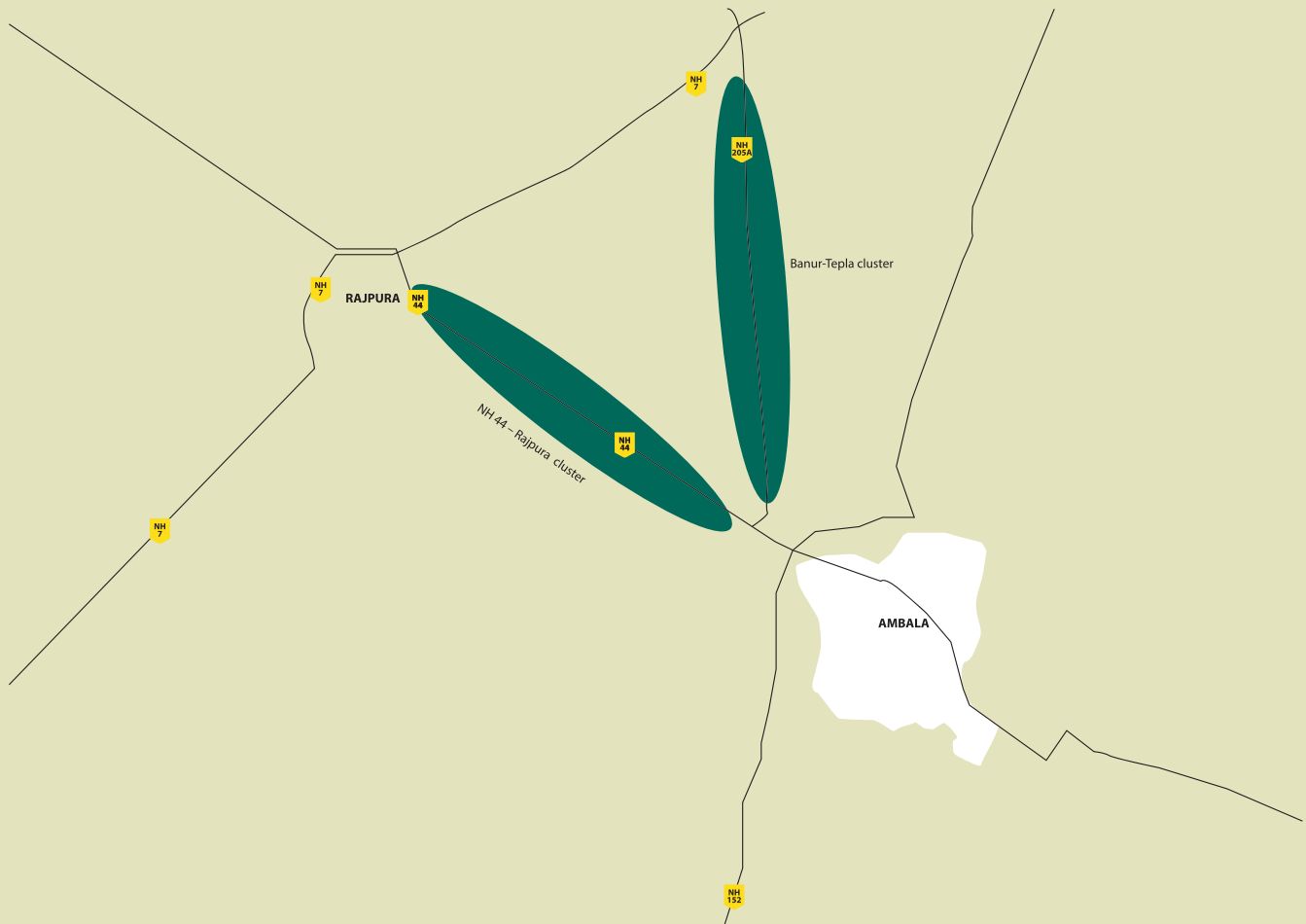
Source: Knight Frank Research

AMBALA-RAJPURA

WAREHOUSING MARKET

- The Ambala-Rajpura warehousing market is strategically located on the Punjab-Haryana border or the Shambhu barrier along the Grand Trunk Road, Banur-Tepla Road and Zirakpur. Shambhu Barrier is of historical significance in the Patiala district as it is a prime de-consolidation location for part truck load capacity in north India. The Ambala-Rajpura warehousing market is unorganized with warehousing facilities spread across several locations in Punjab and Haryana in a triangle. This warehousing market caters to many Tier II cities in northern India. A few regional players have Grade A warehousing footprint on this node as the market has huge potential to serve multiple cities in Punjab, Himachal Pradesh and Jammu & Kashmir.
 - The Ambala-Rajpura warehousing market offers availability of larger land parcels compared to some of the other nearby states which has made it a much sought-after market for developers looking to take exposure in this asset class. Many national players are actively setting up warehouses in this zone due to its strategic importance and consequently, the leasing volumes in this emerging market have been robust over the past six years. Nearly 0.81 mn sq m (8.7 mn sq ft) of warehousing facilities have been leased in the past six years in this market.
 - Rajpura is referred to as the 'Gateway to Punjab', as it is situated at the junction of National Highway 44 (NH 44 or old NH 1) connecting New Delhi to Attari in Punjab, and NH 7 (Old NH 64) which runs from Chandigarh to Dabwali. Along with Ambala, Rajpura provides good road and rail connectivity to six to seven cities in north India. While Jammu & Kashmir is accessible within 6-7 hours via road, other cities such as Ludhiana, Jalandhar, Chandigarh, Shimla and Delhi are only 1-4 hours away, making Rajpura a focal point for distribution of goods and services.
 - Being an industrial town, Rajpura has a concentration of small-scale industries. Due to its proximity to the tri-city (Chandigarh-Mohali-Panchkula), several logistics park developers are launching parks in this region to boost their Grade A warehousing portfolio near NH 44 and NH 7 which are well-connected to the industrial clusters of Manesar, Dharuhera and Bhiwadi. Such growth of Grade A warehousing infrastructure in this cluster will
- 0.11 mn sq m (1.1 mn sq ft) of warehousing space was transacted in the Ambala-Rajpura market.
- While 18% lower than the previous year, volumes were limited to a large extent due to the dearth of quality stock and the limited participation of the 3PL sector in FY 2023.
- The FMCG and other manufacturing sector companies took up 46% and 43% of the total volume respectively during FY 2023.
- support modernization of the supply chain and attract occupiers from sectors such as e-commerce in future.
- Warehousing activity in this market is getting organized in two prominent peripheral clusters: the Banur-Tepla cluster and the NH 44 Rajpura cluster. The scope for Grade A warehousing facilities to come up is huge and crucial to attract significant leasing by occupiers.
 - In FY 2023, the Ambala-Rajpura market accounted for 0.11 mn sq m (1.1 mn sq ft) of warehousing space transacted. While 18% lower than the previous year, volumes were limited to a large extent due to the dearth of quality stock in the market. 63% of the space leased was in the NH 44 Rajpura cluster, while 37% was in the Banur-Tepla cluster.
 - The 3PL sector has anchored this market over the past few years and its reduced participation in FY 2023 have also been a significant factor in the reduction in overall leasing volumes in the market. Averaging 43% of the total transacted volume over the FY 2019-2022 period, the 3PL sector accounted for only 11% in FY 2023. Contrastingly, it was the FMCG and other manufacturing sector companies which took up 46% and 43% of the total volume respectively, during FY 2023 which are significant highs for both sectors.
 - Demand in the secondary markets have been ramping up quite appreciably over the past few years. While the increasing number of enquiries from FMCG and manufacturing players bode well for the Ambala-Rajpura market, the availability of quality warehousing spaces remains a challenge.

Major warehousing locations in Ambala-Rajpura



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|-----------------------|---|
| Banur-Tepla Cluster | Banur, Banur-Tepla Road, Shambhu Barrier and all locations along Ambala-Bypass Road |
| NH-44 Rajpura Cluster | Locations along the Grand Trunk Road (GT Road) from Mohra to Rajpura and Zirakpur |

Source: Knight Frank Research

Major infrastructure in Ambala-Rajpura

| Name | Type |
|------------------|-----------|
| NH 44 (Old NH 1) | Road - NH |
| NH 7 (Old NH 64) | Road - NH |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--------------------|-----------------------|
| Indoswift | NH 44-Rajpura cluster |
| Contract Logistics | Banur-Tepla cluster |

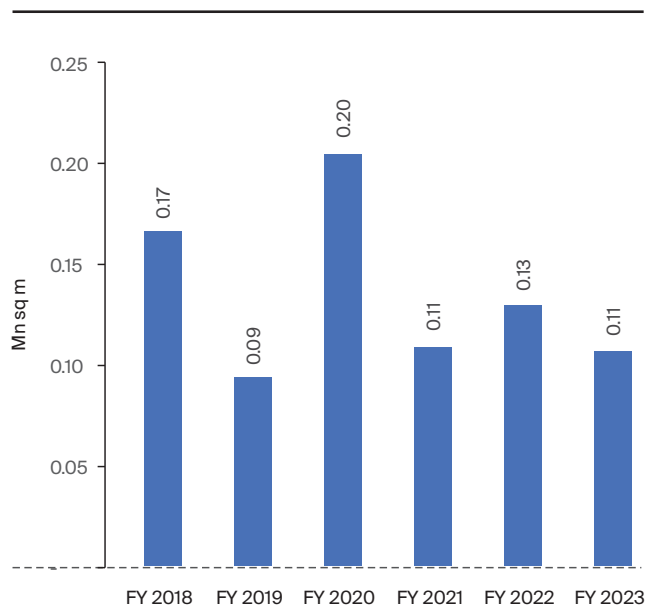
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|-------------------|---------------------|-----------------------|
| Bajaj | Other Manufacturing | Banur-Tepla Cluster |
| Johnson & Johnson | FMCG | Banur-Tepla Cluster |
| Emami | FMCG | NH 44 Rajpura Cluster |
| Godrej | FMCG | NH 44 Rajpura Cluster |
| Tynor | Other Manufacturing | Banur-Tepla Cluster |

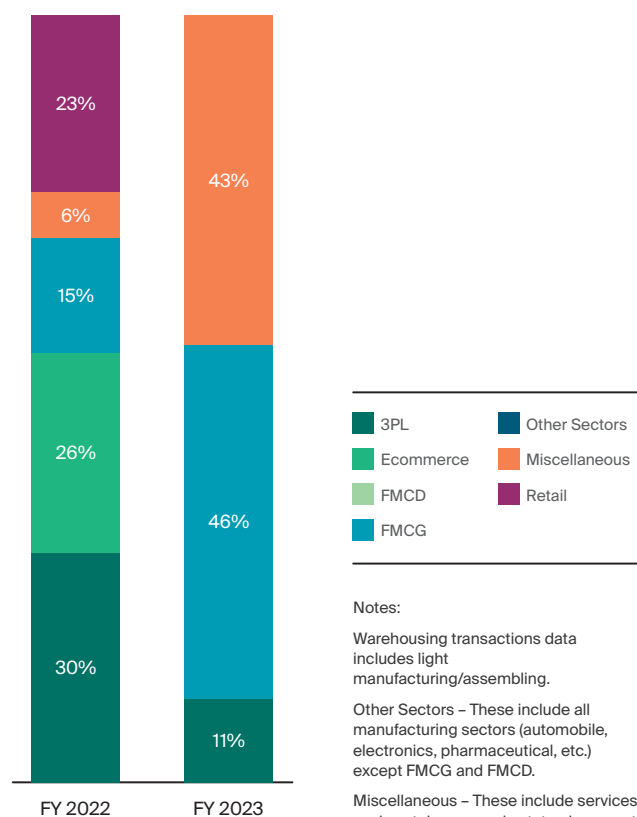
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

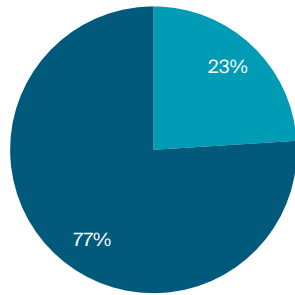
Notes:

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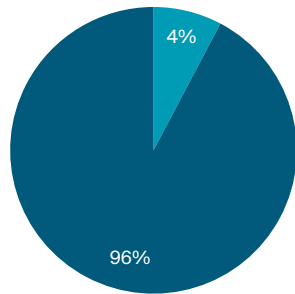
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



FY 2022

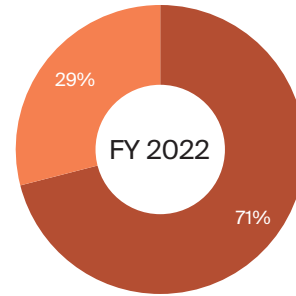


FY 2023

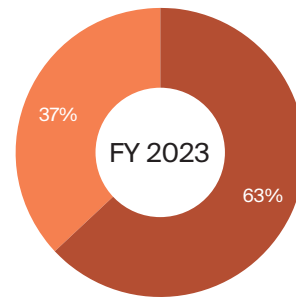
- Industrial
- Warehousing

Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



FY 2022



FY 2023

- NH-44 Rajpura Cluster
- Banur - Tepla Cluster

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|------------------------|-------------------------|--|--|
| Banur-Tepla Cluster | 13-15 | 161-205 (15-19) | 118-140 (11-13) |
| NH 44w-Rajpura Cluster | 15-20 | 161-205 (15-19) | 118-140 (11-13) |

Source: Knight Frank Research

BENGALURU

WAREHOUSING MARKET

- The warehousing leasing activities in Bengaluru continued to remain robust in FY 2023 driven by strong occupier interest in the market. Bengaluru's warehousing market is concentrated in three key clusters, namely, Attibele-Bommasandra in the South, Hoskote-Narsapur in the East and Nelamangala-Dobbaspet in the West. Additionally, Hosur, which is located in Tamil Nadu along the Bengaluru-Chennai industrial corridor, also caters to the consumption demand of Bengaluru due to its proximity to the city.
- In FY 2023, Bengaluru witnessed 0.7 mn sq m (7.4 mn sq ft) of warehousing leasing volume, a 25% growth over FY 2022, surpassing the pre-pandemic level by 72%. Most of the leasing was undertaken by the 3PL occupiers comprising a share of 45% of all the transactions. Growth of industries such as manufacturing and retail and their increasing preference for 3PL for supply chain and logistics functions accentuated the demand for the same in the market.
- Key manufacturing and 3PL players such as Schneider Electric, VRL Logistics and Delhivery leased warehousing and industrial space in Bengaluru with deal sizes ranging from 0.03 mn sq m to 0.07 mn sq m (0.3 mn sq ft to 0.8 mn sq ft).
- Cluster wise, Hoskote-Narsapura accommodated 34% of the total leasing volume, followed by 28% by the Attibele-Bommasandra cluster. The Nelamangala-Dabaspet cluster constituted 25% of the total transactions. Apart from these key clusters, Hosur too witnessed a significant share of leasing activity in FY 2023. Hosur is an industrial, manufacturing and automobiles hub and has gained attractiveness for industrial and warehousing activities due to its proximity to Bengaluru and its relatively cheaper land rates.
- The presence of retailers in Bengaluru's warehousing market has significantly grown in the last few years to cater to the discretionary consumption needs of the city. In FY 2023, 14% of the warehousing volume was leased by the retailers which included players such as Reliance, Tata Trent and Max Retail. The retailers' share in the leasing volume increased from 0.08 mn sq m (0.9 mn sq ft) in FY 2022 to 0.09 mn sq m (1.02 mn sq ft) in FY 2023.
- Bengaluru also has market traction for various auto, auto ancillary and manufacturing sectors. This is reflected in 26% of the total warehousing

In FY 2023, Bengaluru witnessed 0.7 mn sq m (7.4 mn sq ft) of warehousing leasing volume, a 25% growth over FY 2022.

Manufacturing sector led the occupier pie accounting for 47% of the overall leasing in FY 2023.

Hoskote-Narsapura cluster dominated the leasing volume accommodating 34% of the leasing activity during FY 2023.

area leased by other sectors of which manufacturing is the major component. With the growing demand for electric vehicles (EV), Bengaluru's warehousing market witnessed demand from EV players such as Oben Electric, Alti Green and Sun Mobility.

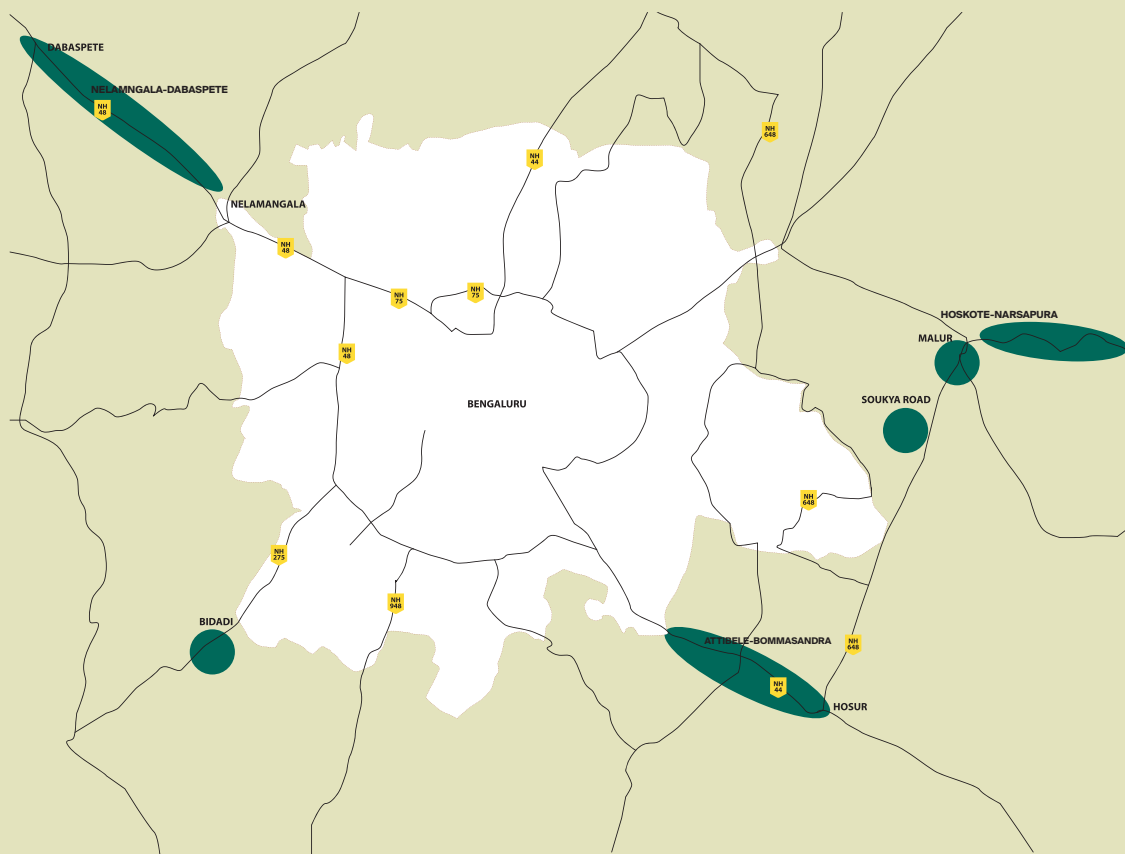
- At the state level, Karnataka was the first state to act on encouraging electric vehicles, with the announcement of the Karnataka Electric Vehicles and Energy Storage Policy (KEVESP) in 2017. The policy was formulated to make Bengaluru the EV capital of India. The city provides a suitable ecosystem for research and development, technological advancements, and manufacturing of EVs and registers the maximum number of two-wheelers in the country. As per KEVESP 2017, the Government of Karnataka is targeting 100% EV adoption by 2030 in the private transport segment in Bengaluru. Thus, the city provides a conducive environment for the EV players to establish their manufacturing as well as warehousing facilities around the city.
- The warehousing clusters of Bengaluru are well connected to the key road infrastructure. The Hoskote-Narsapura cluster is located along the National Highway 75 (NH 75) connecting Karnataka, Tamil Nadu and Andhra Pradesh. Similarly, the Nelamangala-Dabaspet cluster is located along the National Highway 48 which is connected to seven states of the country beginning at Delhi and terminating at Chennai, passing via Bengaluru. Thus, the convenience of well-connected transport infrastructure promotes Bengaluru as a sought-after warehousing market in Southern India.
- Post GST implementation in 2017, the demand for large, organised warehouses has significantly risen especially in strategic locations. This has boosted the developer's sentiments to successfully build large institutional Grade A warehousing facilities in Bengaluru's prominent clusters. Quality warehousing structures along with built to suit facilities have deepened occupier interest in Grade A warehouses. However, although the presence of Grade A developers in the warehousing market has improved in the last few years, their supply is still deficient in comparison to Grade B. Therefore, the leasing volume in Grade B warehouses in Bengaluru exceeded Grade A. The share of transactions in Grade B warehouses increased from 44% in FY 2022 to 60% in FY 2023.

- In the next few years, the demand for warehousing and logistics facilities in Bengaluru market should thrive due to the growing consumer demand. Bengaluru is one of the fastest growing city economies of the country with a GDP of USD 97 bn estimated in FY 2023 and is expected to expand in the coming years supported by strong

growth across the sectors. Moreover, state government initiatives in recent years such as the Karnataka Industrial Policy (2020-2025), which aims to attract integrated industrial parks and private developers for the development of Multi-Modal Logistics Parks (MMLP), Logistics Park, Dry Ports, Cold Storages, Warehouses, Free

Trade Warehouse Zones (FTWZ) etc., will continue to boost warehousing development in Bengaluru. The construction of road infrastructure such as peripheral ring road and expressway will boost connectivity and provide impetus to the warehousing market in Bengaluru.

Major warehousing locations in Bengaluru



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|-------------------------------|--|
| Nelamangala-Dabaspete cluster | Nelamangala, T Begur, Govinahalli, Dabaspete, Devenahalli, Doddaballapur |
| Hoskote-Narsapura cluster | Hoskote, Nidagatta, Thavarekere, Narsapura, Malur, Sulibele |
| Attibele-Bommasandra cluster | Attibele, Bommasandra, Attibele-Anekal Road |
| Others | Hosur, Soukya Road, Bidadi |

Source: Knight Frank Research

Major infrastructure in Bengaluru

| Name | Type |
|---|---------------------|
| Peripheral Ring Road | Road |
| NH 48/Mumbai-Bengaluru Highway | Road-NH |
| NH 75/Bengaluru-Tirupati Highway | Road-NH |
| NH 648/Nelamangala-Hosur Road | Road-NH |
| NH 44/Bengaluru-Hosur Road | Road-NH |
| Electronic City Elevated Expressway | Tolled Expressway |
| Nandi Infrastructure Corridor Enterprises Road (NICE Road) or Bengaluru-Mysuru Infrastructure Corridor (BMIC) | Tolled Expressway |
| Bengaluru-Mysuru Expressway | Tolled Expressway |
| Chennai-Bengaluru Industrial Corridor | Industrial Corridor |
| Bengaluru-Mumbai Industrial Corridor | Industrial Corridor |
| Kochi-Bengaluru Industrial Corridor | Industrial Corridor |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|---------------------------------------|--------------------------|
| IndoSpace | 1. Nelamangala-Dabaspete |
| | 2. Bommasandra |
| | 3. Narsapura |
| Embassy Industrial Parks (Blackstone) | Shoolagiri-Hosur Road |
| Welspun | Hosur-Bagalur |
| Mapletree | Sulibele |
| Avigna | Narsapura, Hosur |
| Ascendas-Firstspace | Dabaspeta, Hoskote |
| TVS logistics | Hosur |

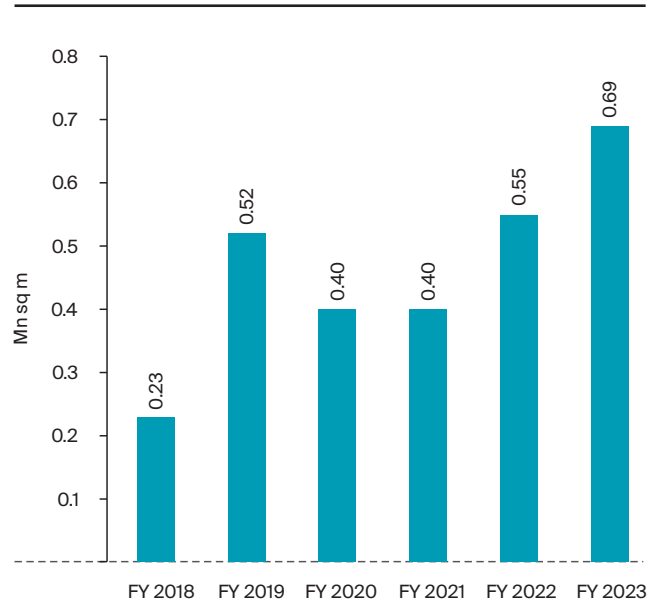
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|----------------------------------|-------------------|-------------------------------|
| Schneider Electric Manufacturing | | Attibele-Bommasandra cluster |
| VRL logistics | 3PL | Nelamangala-Dabaspeta cluster |
| Tata Trent | Retail | Hoskote-Narsapura cluster |
| DP World | 3PL | Hoskote-Narsapura cluster |
| Delhivery | 3PL | Nelamangala-cluster |

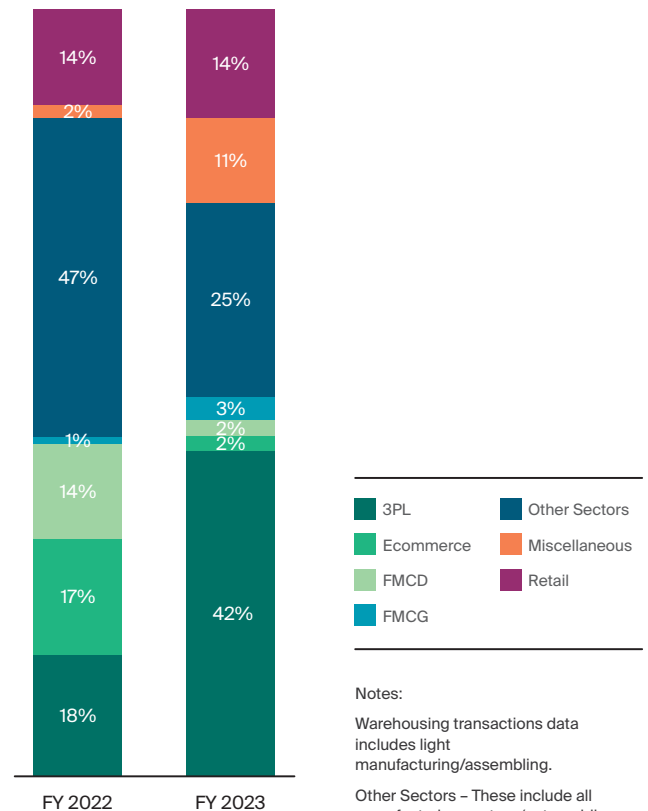
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



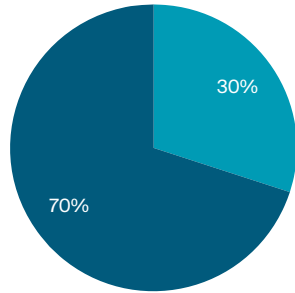
Notes:

Warehousing transactions data includes light manufacturing/assembly.

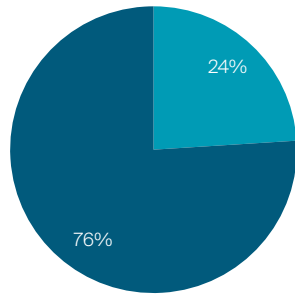
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Source: Knight Frank Research

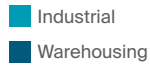
Transaction share by end-use of space



FY 2022

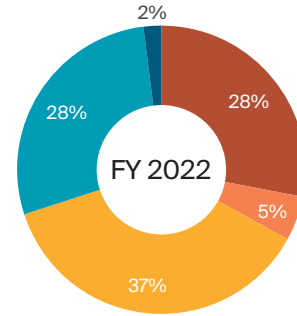


FY 2023

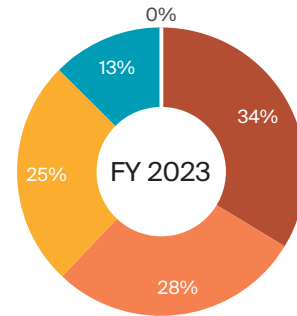


Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

Cluster split of transactions



FY 2022



FY 2023



Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|------------------------------|------------------------|-------------------------|--|--|
| Attibele-Bommasandra cluster | Bommasandra-Jigani | 90-160 | 260-450 (24-42) | 172-291 (16-27) |
| | Attibele-Anekal | 40-70 | 258-301 (24-28) | 194-280 (18-26) |
| Devanahalli-Doddabalapur | Doddaballapur | 25-55 | 237-258 (22-24) | 183-237 (17-22) |
| | Devanahalli | 45-85 | 280-409 (26-38) | 248-280 (23-26) |
| Hoskote-Narsapura | Hoskote | 30-45 | 248-301 (23-28) | 205-248 (19-23) |
| | Siddhalaghatta | 25-35 | 237-280 (22-26) | 205-237 (19-22) |
| Nelamangala-Dobbaspet | Nelamangala | 35-65 | 248-280 (23-26) | 194-237 (18-22) |
| In City | Across Bengaluru | 45-240 | NA | NA |
| Others | Whitefield-Soukya Road | 50-240 | 258-452 (24-42) | 248-280 (23-26) |
| | Soukya Road | 45-75 | 258-301 (24-28) | 248-280 (23-26) |
| | Bidadi | 35-65 | 248-301 (23-28) | 226-258 (21-24) |
| | Hosur | 18-45 | 205-258 (19-24) | 183-237 (17-22) |

Source: Knight Frank Research

“

The warehousing and logistics sector in India is undergoing a remarkable transformation, garnering significant attention and recognition for its contribution to the country's GDP. As this sector takes shape, it is poised to make a substantial impact on India's overall growth in the coming years.

We are witnessing a pivotal moment where organized warehousing that was once minuscule, has experienced a surge with the emergence of Grade A developers like TVS ILP (a part of TVS Mobility group). With a strong focus on customized and sustainable solutions, TVS ILP has consistently achieved a year-on-year growth of 30%. Adding to the increasing demand in the industry, TVS ILP has set its sights on creating a 20 million square feet platform for warehousing across India in the next few years.

The booming warehousing industry in India is yet to fully meet the rising demand, creating significant growth opportunities. The industry's expansion extends beyond major cities into Tier 2 and Tier 3 towns, driven by the presence of sectors like FMCG, FMCD, 3PL, manufacturing allied warehousing services etc. The National Logistics Policy is set to bring transformative changes, prompting strategic consolidation and relocation efforts by FMCG and FMCD players across the country. These players are aligning with government policies, adapting to evolving growth patterns, and optimizing operational costs to position themselves for long-term success.

With the right policies, strategic consolidation, and a reorientation of operations, we anticipate a positive impact in the near future. As the sector evolves, we believe, it will drive India's economic growth and bring positive change for businesses and consumers alike.

”

Manikandan Ramachandran

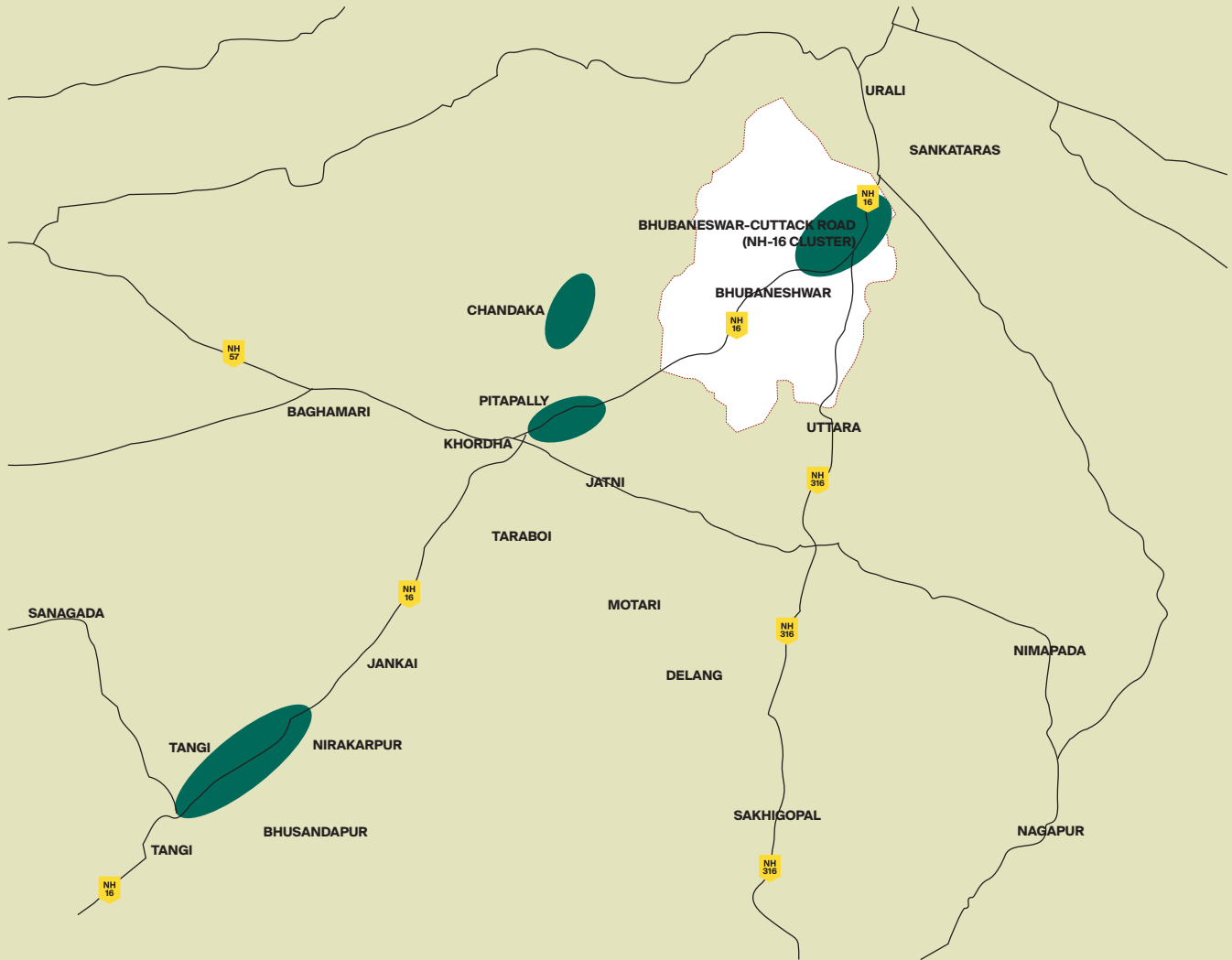
COO
TVS ILP

BHUBANESWAR

WAREHOUSING MARKET

- Bhubaneswar is an active tier II warehousing market in eastern India and is well connected with other industrial clusters in the region. Bhubaneswar is one of the fastest growing manufacturing hubs in the country with manufacturing activity spread across the metals, minerals, and food processing sectors. Access to well-developed infrastructure in Bhubaneswar such as ports and national highways fosters ease of transport. Additionally, the presence of large industrial hubs, and cargo and container handling activity at Dhamra and Paradip ports augur well for organized warehousing in the region.
 - Bhubaneswar has both Grade A and Grade B warehouses and the presence of both prominent and local developers. In FY 2022-23, 0.11 mn sq m (1.18 mn sq ft) of warehousing area was transacted in Bhubaneswar, a 32% growth over the previous financial year. Of the total leasing, 31% of space was leased by 3PL occupiers such as Proconnect Supply Chain Solutions, Delhivery, Ecom Express etc. Growth in other sectors such as manufacturing, retail, FMCG and their direct preference for 3PL players for ease of supply chain continues to boost the demand for the latter.
 - Bhubaneswar has four warehousing clusters, namely, Bhubaneswar-Cuttack Road (NH-16), Tangi, Pitapalli and Chandaka. Bhubaneswar-Cuttack Road (NH-16) is a key warehousing belt in the region located along the Odisha economic corridor connecting 11 industrial clusters spread across 600 kms approximately. During FY 2022-23, 49% of the warehousing transactions in Bhubaneswar were recorded on Bhubaneswar-Cuttack Road (NH-16). The cluster witnessed big-ticket leasing activity by key FMCG, 3PL and retail occupiers with area ranging from 0.01 mn sq m (0.08 mn sq ft) to 0.02 mn sq m (0.18 mn sq ft).
 - Pitapalli, another key warehousing cluster in Bhubaneswar, is located about 22 kms from Bhubaneswar city in close proximity to NH-16. It has the presence of TVS Logistics and Industrial Park, which is the largest Grade A warehousing park in the market spread across 11 acres with a built-up area of 0.027 mn sq m (0.30 mn sq ft).
- Bhubaneswar witnessed warehousing leasing volume of 0.11 mn sq m (1.13 mn sq ft) during FY 2023, a 32% YoY growth.
- 3PL occupiers led the demand for warehousing area in Bhubaneswar accounting for 31% of the leasing volume during FY 2023.
- 49% of the warehousing transactions were recorded on Bhubaneswar-Cuttack Road (NH-16).
- In the next few years, the need for last mile delivery in the eastern and north-eastern states of India will more likely scale up the demand for warehousing in Bhubaneswar. Additionally, state government initiatives such as the Odisha Logistics Policy 2022 will boost warehousing and logistics demand in Bhubaneswar. The Odisha Logistics Policy 2022 aims to map, develop and augment logistics facilities across the state, improve efficiency of supply chain, decarbonise the logistics sector and facilitate private sector investment, ultimately generating employment opportunities. This policy would also lead to the creation of an integrated logistics system to enhance competitiveness, operational efficiency and sustainability, besides strengthening Odisha's position as a preferred destination for trade and commerce in the country.

Major warehousing locations in Bhubaneswar



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--|---|
| Bhubaneswar-Cuttack Road (NH-16 Cluster) | Rudrapur, Mancheswar, Nakhara, Pahala, Phulnakhara, Patia |
| Tangi | Tangi, Mongoli, Kesura |
| Pitapalli | Khordha, Off Khandagari |

Source: Knight Frank Research

Major infrastructure in Bhubneshwar

| Name | Type |
|-----------------------------------|-----------|
| NH 16/Bhubaneswar-Cuttack Highway | Road – NH |
| NH 316/Bhubaneswar-Puri | Road – NH |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|---------------------------------|-------------------|
| Kingston Logistics Park | Others (Choudwar) |
| TVS Industrial & Logistics Park | Chandaka |

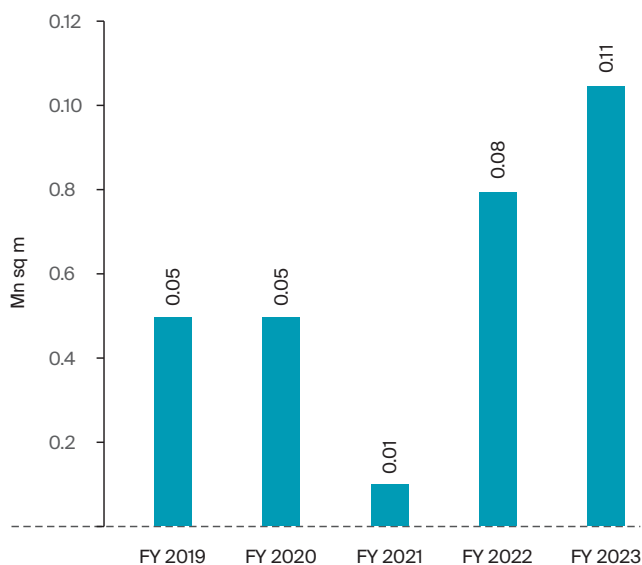
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------------|-------------------|-----------------------------------|
| Hindustan Unilever | FMCG | Bhubaneswar-Cuttack Road (NH-16) |
| Reliance | Retail | Tangi |
| Proconnect | 3PL | Chandaka |
| Ecom Express | 3PL | Bhubaneswar-Cuttack Road (NH-16) |
| Flipkart | E commerce | Tangi |

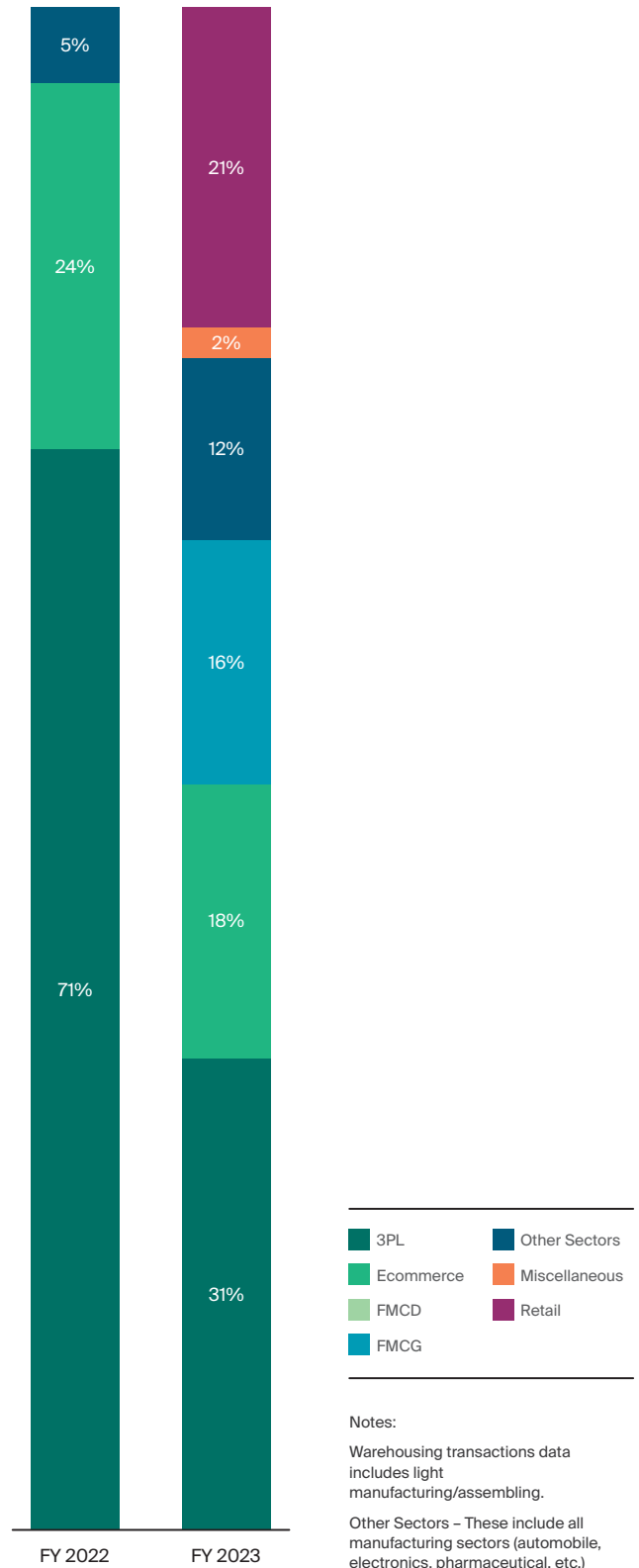
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



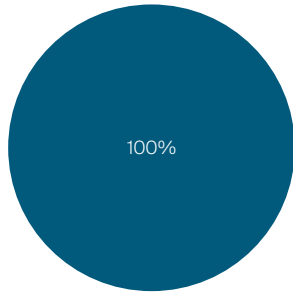
Source: Knight Frank Research

Notes:

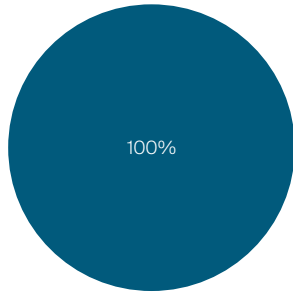
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Transaction share by end-use of space



FY 2022

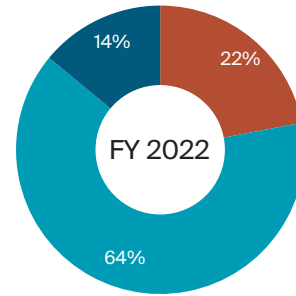


FY 2023

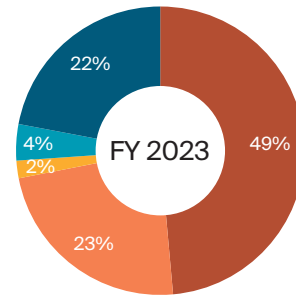
- Industrial
- Warehousing

Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

Cluster split of transaction volume



FY 2022



FY 2023

- Bhubaneswar-Cuttack Road (NH-16 Cluster)
- Chandaka
- Others
- Pitapalli
- Tangi

Source: Knight Frank Research

CHENNAI

WAREHOUSING MARKET

- Chennai's development as a thriving trade center during the British era is due to its coastal location. The city is the first significant halt on India's east coast in the Bay of Bengal, and it has two significant ports: Chennai Port, India's second-largest cargo port, and Ennore Port. The other ports, such as the Kattupalli Port, have also contributed to the growth of Chennai's trading base.
- Chennai became a desirable base for heavy industries due to its proximity to the sea. The city serves as the Indian automobile industry's home base. Other notable trades practiced here include textile production and manufacture of heavy industries. These three businesses have been and still are driving the industrial and warehousing markets in Chennai. E-commerce and retail players have been a recent addition to this list of warehousing demand drivers in Chennai. Warehousing activity in Chennai is focused in three clusters: one covering the city's south-west and western edge, another covering its northern belt, and a third covering its southern portion.
- The Sriperumbudur-Oragadam cluster is made up of storage facilities located between the Grand Southern Trunk Road (GST Road/Chennai-Trichi Highway) in the south, and the Poonamallee High Road (Mumbai Highway) in the west. The Mannur-Thiruvallur belt which comprises Mevalurkuppam, Mappedu, Mannur, Pollivakkam, and Thiruvallur, is also a part of this cluster. This cluster, well-known for manufacturing, serves as the main hub for the automotive and its ancillaries production industries. During FY 2023, this cluster accounted for 50% of all the warehousing transactions in Chennai. Within the Sriperumbudur-Oragadam cluster, transactions related to the 3PL space were dominant accounting for 47% of the occupier pie.
- The NH 16/GNT Road-Periyapalayam cluster is composed of northern locations around the Grand Northern Trunk Road (GNT Road/Chennai-Srikakulam Highway/NH 16 or the previous NH 5) in North Chennai. Traditionally serving an industrial belt, this cluster has recently caught the attention of e-commerce businesses, FMCG companies, and significant 3PL players, particularly along the NH 16/GNT Road-Redhills belt. During FY 2023, this cluster accounted for 37% of all the

Transaction activity has been resilient witnessing leasing volumes of 0.42 mn sq m (4.5 mn sq ft) in FY 2023

3PL businesses led the demand for warehouse space in Chennai accounting for 44% of all transactions.

Both land rates and rentals have remained stable during FY 2023

warehousing transactions in Chennai. Within the NH 16/GNT Road-Periyapalayam (North Chennai) cluster, transactions related to the 3PL space were dominant accounting for 56% of the occupier pie.

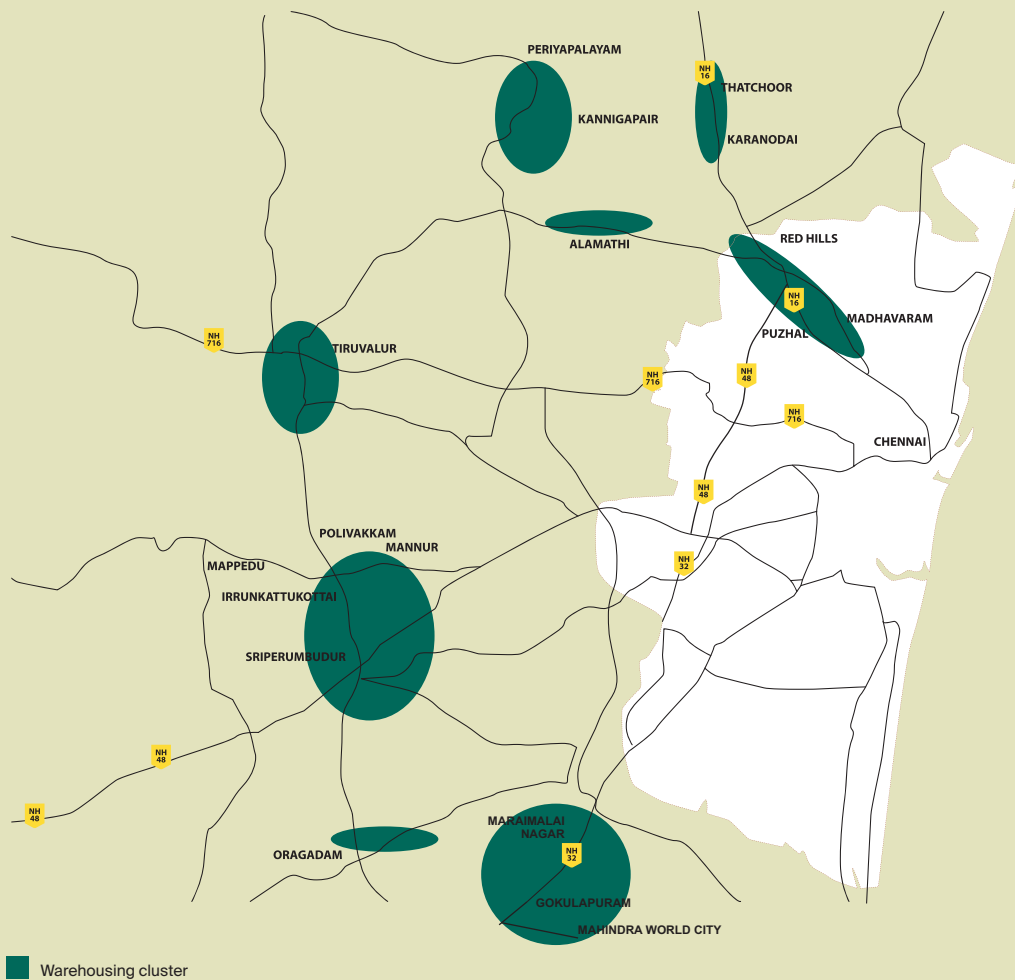
- The GST Road-Maraimalai Nagar cluster is made up of storage facilities in Chennai's south-east, including Chengalpattu, Sengundram Industrial Area, and Maraimalai Nagar. This cluster meets the new industrial demand in the city as well as the spillover demand from the Sriperumbudur-Oragadam cluster. During FY 2023, this cluster accounted for 13% of all the warehousing transactions in Chennai.
- Transaction activity in the Chennai market has been resilient with the 3PL sector having the largest share in the occupier transaction pie. Overall, transactions have declined by 11% YoY, from 0.47 mn sq m (5.1 mn sq ft) in FY 2022 to 0.42 mn sq m (4.5 mn sq ft) in FY 2023. However, it must be noted, despite the YoY decline in transaction volumes during the current analysis period, they are still higher than any other previous period except FY 2022.
- In terms of the industry-split of annual transactions, 3PL businesses led the demand for warehouse space in Chennai accounting for 44% of all transactions, followed by manufacturing and FMCD at 24% and 17% respectively. Evolving consumer behavior, supply chain visibility, the need for vendor and inventory management has led companies to outsource their logistics requirements thus propelling the growth of 3PL players.
- In FY 2023, the space taken up for warehousing storage purposes constituted 89% share of the transactions as compared with 69% share recorded during FY 2023. The industrial segment which undertakes various kinds of light to heavy manufacturing activities in warehousing parks accounted for 11% share of transactions, lower than the 31% share recorded in the previous financial year. This can be attributed in part to the lower take-up by manufacturing companies whose share of transactions has also dropped from 38% in FY 2022 to 24% in FY 2023.
- Both land rates and rentals have remained stable during FY 2023 as compared with the rates and rentals observed during FY 2022.
- Going forward, demand from the 3PL and

manufacturing sectors is expected to grow considering the center's focus on growing India's manufacturing and industrial base. Chennai's well-established automobile and industrial foundation positions it well to

capitalize on this macro-trend. Hyundai's recent announcement of an INR 20,000 cr investment is one such prominent example of a large-scale investment. Demand for Warehousing will be augmented with the

availability of a conducive physical infrastructure and the connectivity needed across major locations in and around the city and state.

Major warehousing locations in Chennai



Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--|---|
| Sriperumbudur-Oragadam cluster | Irrungattukottai, Sriperumbudur, Oragadam and other locations on the in-roads branching from Sriperumbudur. Mevalurkuppam, Mappedu, Mannur, Pollivakkam and Thiruvallur |
| NH 16/GNT Road-Periyapalayam cluster (North Chennai) | Periyapalayam Road, Thatchoor, Gummudipoondi. NH 16/GNT Road-Redhills Belt: Includes Madhavaram, Manali, Red Hills, Puzhal, Karanodai, Alamathi and Poochettipedu |
| GST Road-Maraimalai Nagar cluster | Maraimalai Nagar, in and around Mahindra World City, Sengundram Industrial area, Chengalpattu |

Source: Knight Frank Research

Major infrastructure in Chennai

| Name | Type |
|---|---------------------|
| Chennai Port | Port |
| Ennore Port | Port |
| NH 16/Grand Northern Trunk Road | Road-NH |
| NH 32/East Coast Road | Road-NH |
| NH 45/Grand Southern Trunk Road | Road-NH |
| NH 48/Poonamallee High Road | Road-NH |
| NH 716/Chennai-Thiruvallur High Road | Road-NH |
| Chennai-Bengaluru Industrial Corridor | Industrial Corridor |
| Visakhapatnam Chennai Industrial Corridor | Industrial Corridor |
| Tamil Nadu Defence Industrial Corridor | Industrial Corridor |
| Chennai MMLP | MMLP |
| Chennai International Airport | Airport |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|----------------------|--------------------------------------|
| Logos Park | Sriperumbudur-Oragadam Cluster |
| Indospace | Sriperumbudur-Oragadam Cluster |
| CCI Logistic | Sriperumbudur-Oragadam Cluster |
| Sammera Group | NH 16/GNT Road-Periyapalayam Cluster |
| House of Hiranandani | NH 16/GNT Road-Periyapalayam Cluster |
| Welspun | NH 16/GNT Road-Periyapalayam Cluster |

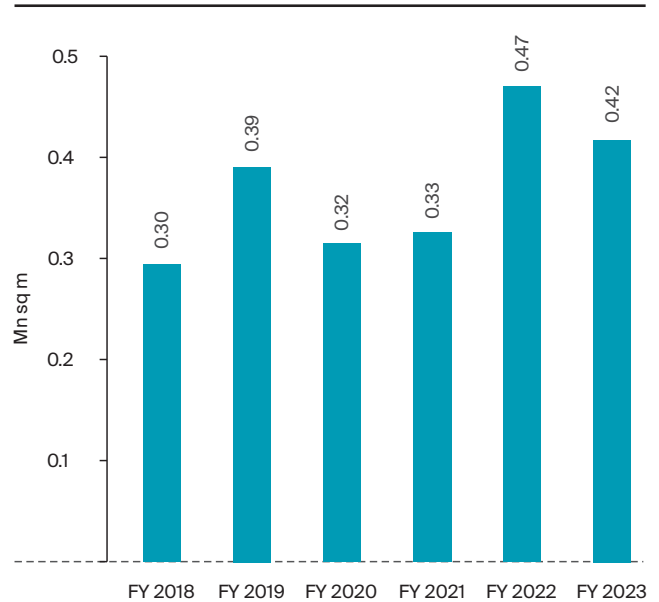
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|------------------|-------------------|--------------------------------------|
| Samsung | FMCD | Maraimalai Nagar |
| Kerry & indev | 3PL | Sriperumbudur-Oragadam cluster |
| Polkart | 3PL | NH 16/GNT Road-Periyapalayam Cluster |
| Jost India | Manufacturing | NH 16/GNT Road-Periyapalayam Cluster |
| TVS Supply Chain | 3PL | NH 16/GNT Road-Periyapalayam Cluster |

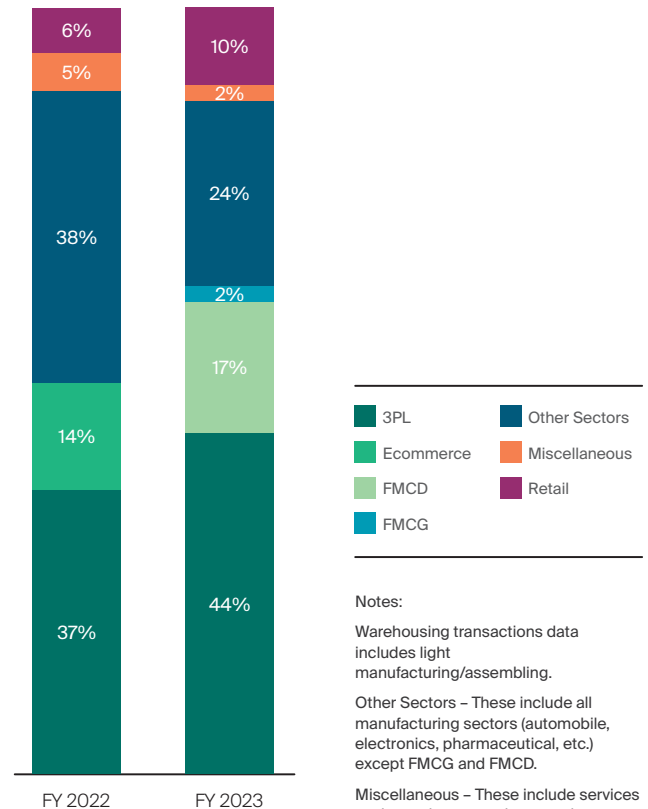
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Notes:

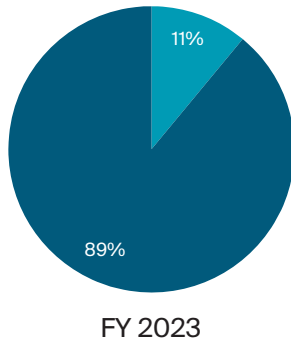
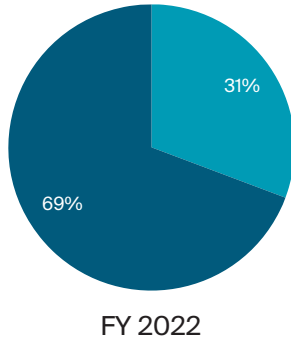
Warehousing transactions data includes light manufacturing/assembly.

Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing, and publishing.

Source: Knight Frank Research

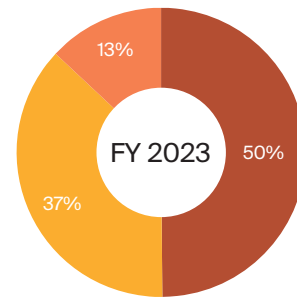
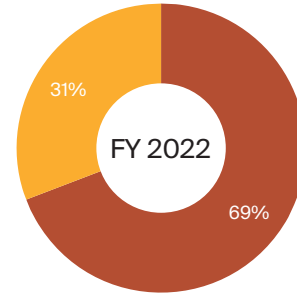
Transaction share by end-use of space



Industrial
Warehousing

Source: Knight Frank Research
Note: Warehousing transactions: These refer to storage activity.
Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



Sripurumbudur - Oragadam
NH 16 Periyapalayam
Maraimalai Nagar

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|---|------------------------|-------------------------|--|--|
| Sripurumbudur-Oragadam cluster | Sripurumbudur | 20-25 | 237 - 269 (22 - 25) | 226 - 258 (21 - 24) |
| | Oragadam | 20-30 | 248 - 280 (23 - 26) | 226 - 258 (21 - 24) |
| | Mappedu | 10-15 | 172 - 205 (16 - 19) | 161 - 183 (15 - 17) |
| | Mannur | 17-23 | 205 - 237 (19 - 22) | 183 - 205 (17 - 19) |
| | Irungattukottai | 40-45 | 237 - 269 (22 - 25) | 215 - 248 (20 - 23) |
| | Pollivakkam | 15-18 | 205 - 226 (19 - 21) | 194 - 226 (18 - 21) |
| NH 16/GNT Road -Periyapalayam cluster (North Chennai) | Cholavaram | 13-16 | 194 - 237 (18 - 22) | 172 - 215 (16 - 20) |
| | Red Hills | 15-17 | 215 - 248 (20 - 23) | 194 - 237 (18 - 22) |
| | Karanodai | 17-22 | 215 - 248 (20 - 23) | 194 - 237 (18 - 22) |
| | Madhavaram | 80-100 | 226 - 258 (21 - 24) | 205 - 237 (19 - 22) |
| | Puzhal | 60-80 | 215 - 258 (20 - 24) | 205 - 237 (19 - 22) |
| | Periyapalayam | 13-16 | 172 - 194 (16 - 18) | 172 - 194 (16 - 18) |
| GST Road-Maraimalai Nagar cluster | In and around Mahindra | | | |
| | World City | 25-27 | 248 - 280 (23 - 26) | 248 - 280 (23 - 26) |
| | Maraimalai Nagar | 40-45 | 237 - 280 (22 - 26) | 237 - 258 (22 - 24) |

Source: Knight Frank Research

COIMBATORE

WAREHOUSING MARKET

- Located in the middle of the Southern Peninsula, Coimbatore offers easy access to Bengaluru, north Kerala, south Karnataka, and west & south Tamil Nadu. Due to this, numerous 3PL businesses and e-commerce players have established warehouses in Coimbatore to serve a wider range of customers from a single location. The Avinashi Road and the Pollachi & Palladam-Cochin Frontier Road are the two primary warehousing clusters in Coimbatore.
- The Neelambur, IOC-L&T Bypass Road, and Avinashi areas in the east have been combined into a single homogenous cluster known as the Avinashi Road cluster, which largely hosts several industries.
- The Pollachi & Palladam-Cochin Frontier Road storage cluster, which includes the southern locales of Pollachi, Chettipalayam, Malumichampatty, Palladam and Walayar, meets the warehousing needs of 3PLs, e-commerce businesses, and FMCG/FMCD companies. From the neighbouring state of Kerala, this cluster provides easy access to the consumption markets of Coimbatore city and Kochi.
- Most of transaction activity in the Coimbatore warehousing market during FY 2023 was centered in the Pollachi & Palladam-Cochin Frontier Road cluster led by an increase in demand from the retail, e-commerce and 3PL industries. This cluster contributed 76% of the overall transactions during FY 2023.
- The Coimbatore warehousing market recorded 0.11 mn sq m (1.2 mn sq ft) of space absorption during FY 2023, a 9% drop compared with the 0.12 mn sq m (1.3 mn sq ft) recorded during FY 2022.
- This drop in transactions can be attributed to the reduction in space leased by 3PL and FMCG players, although there was a sharp increase in warehouse leasing by retail and manufacturing players which has increased 200% and 114% YoY, respectively. An increase in the organized retail sector and a growth in the industries that dominate Coimbatore such as the traditional heavy pump manufacturing industries, textile factories and metal casting industries, have led to the increase in demand for warehousing space by retail and manufacturing players.

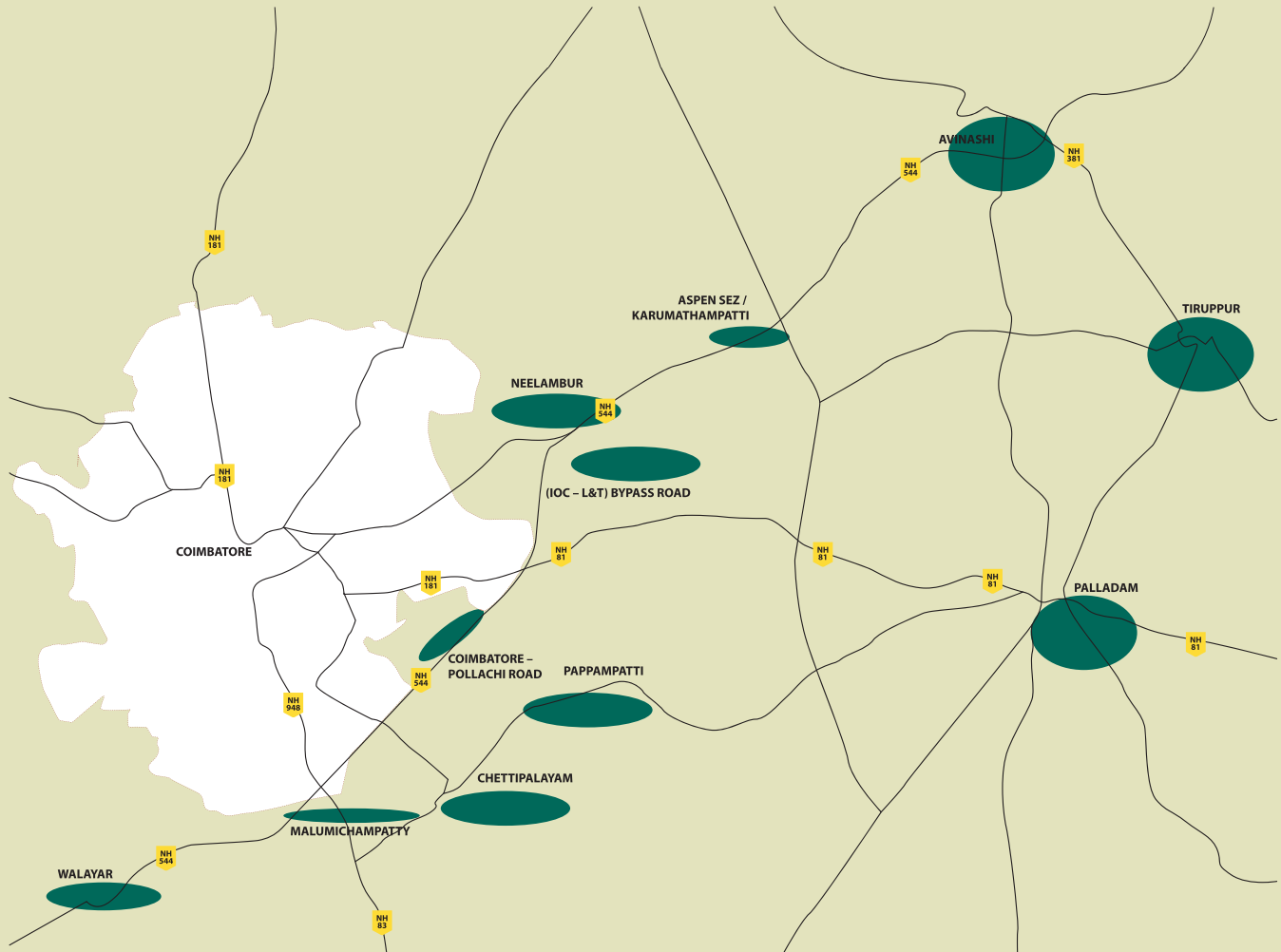
The warehousing market recorded 0.11 mn sq m (1.2 mn sq ft) of space absorption during FY 2023

The retail sector accounted for 39% of the overall transaction.

Most of transaction activity in the Coimbatore warehousing market during FY 2023 was centered in the Pollachi & Palladam-Cochin Frontier Road cluster.

- The retail sector accounted for 39% of all transaction activity followed by the e-commerce and 3PL segments which accounted for 26% and 17% of the overall transaction pie during FY 2023.
- Land rates as well as the rentals were largely stable during FY 2023.

Major warehousing locations in Coimbatore



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--|--|
| Avinashi Road cluster | Neelambur, Aspen SEZ/Karumathampatti, Avinashi, Tiruppur, other locations on Coimbatore-Avinashi Road (NH 544), and Indian Oil Corporation-Larsen & Toubro (IOC-L&T) Bypass Road |
| Pollachi & Palladam-Cochin Frontier Road cluster | Coimbatore-Pollachi Road, Malumichampatty, Chettipalayam, Pappampatti, Palladam, Walayar |

Source: Knight Frank Research

Major infrastructure in Coimbatore

| Name | Type |
|--|---------------------|
| NH 544/Salem-Kochi Highway/Avinashi Road | Road-NH |
| NH 948/Bengaluru Road | Road-NH |
| NH 181/Mettupalayam Road | Road-NH |
| NH 81/Trichy Road | Road-NH |
| NH 83/Pollachi Road | Road-NH |
| Tamil Nadu Defence Industrial Corridor | Industrial Corridor |
| Coimbatore MMLP | MMLP |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--------------------------------------|--|
| TVS Industrial Park-Appanaickenpatti | Pollachi & Palladam-Cochin Frontier Road cluster |
| NDR Warehousing-Chettipalayam | Pollachi & Palladam-Cochin Frontier Road cluster |
| Indospace | Pollachi & Palladam-Cochin Frontier Road cluster |
| NDR Warehousing-Othakalmandapam | Pollachi & Palladam-Cochin Frontier Road cluster |
| NDR Warehousing-Ettimadai | Pollachi & Palladam-Cochin Frontier Road cluster |

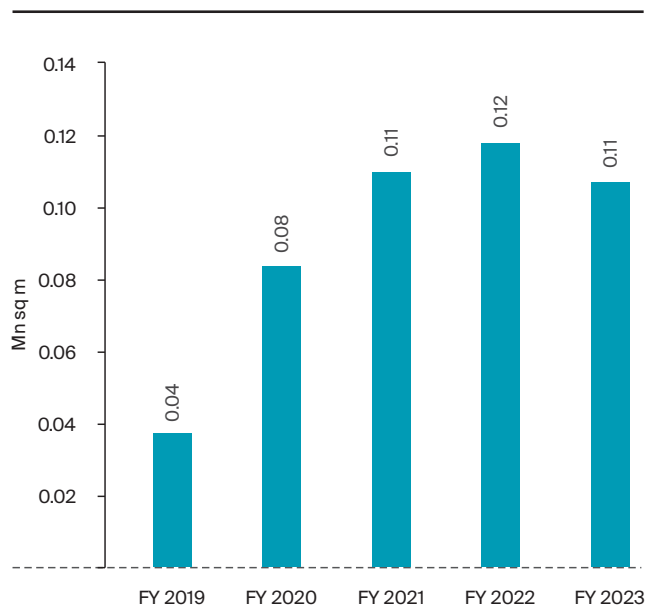
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|-----------|-------------------|--|
| Reliance | Retail | Pollachi & Palladam-Cochin Frontier Road |
| FSC | 3PL | Pollachi & Palladam-Cochin Frontier Road |
| First Cry | E-commerce | Pollachi & Palladam-Cochin Frontier Road |
| Instakart | E-commerce | Pollachi & Palladam-Cochin Frontier Road |
| Nestle | FMCG | Pollachi & Palladam-Cochin Frontier Road |

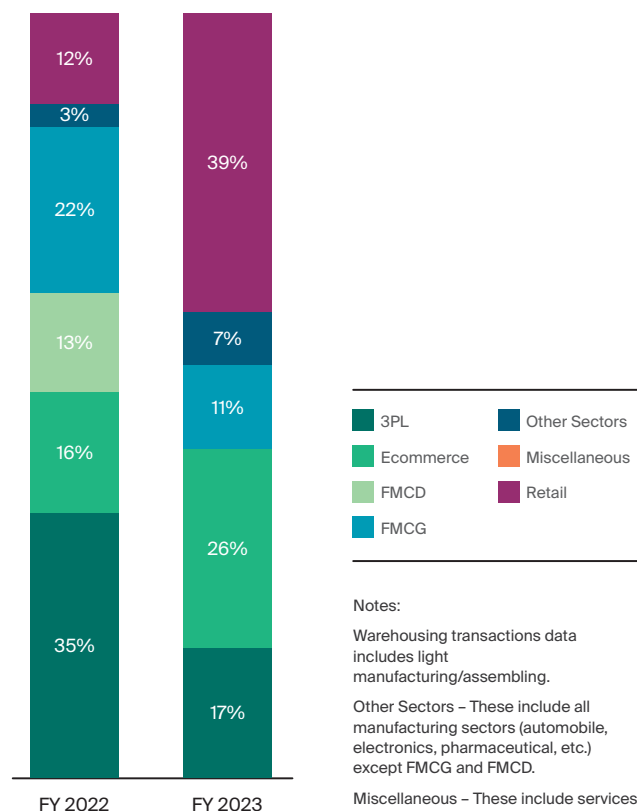
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

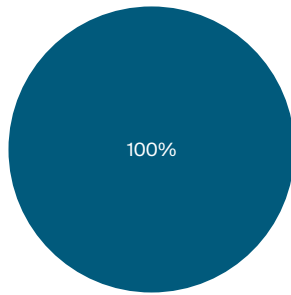
Notes:

Warehousing transactions data includes light manufacturing/assembly.

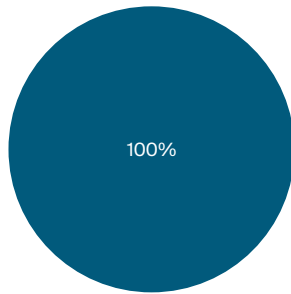
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing, and publishing.

Transaction share by end-use of space



FY 2022

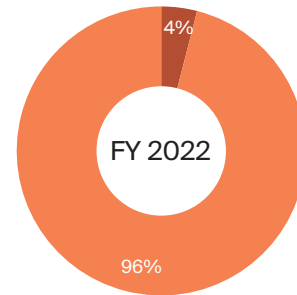


FY 2023

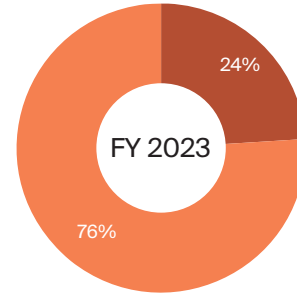
Industrial
Warehousing

Source: Knight Frank Research
Note: Warehousing transactions: These refer to storage activity.
Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



FY 2022



FY 2023

Avinashi Road
Pollachi + Palladam - Cochin Frontier Road

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|--|----------------------------|----------------------------------|--|--|
| Avinashi Road cluster | Neelambur | No development of new warehouses | No Grade A | 161 – 215 (15 – 20) |
| | IOC-L&T Bypass | No development of new warehouses | No Grade A | 161 – 194 (15 – 18) |
| | Aspen SEZ/ Karumathampatti | No development of new warehouses | No Grade A | 161 – 194 (15 – 18) |
| | Avinashi | No development of new warehouses | No Grade A | 140 – 172 (13 – 16) |
| | Tiruppur | No development of new warehouses | No Grade A | 151 – 172 (14 – 16) |
| Pollachi & Palladam-Cochin Frontier Road cluster | Coimbatore-Pollachi Road | 14 – 17 | 194 – 237 (18 – 22) | 161 – 194 (15 – 18) |
| | Malumichampatty | 17 – 25 | 194 – 237 (18 – 22) | 170 – 194 (16 – 18) |
| | Palladam | 10 – 15 | 183 – 215 (17 – 20) | 140 – 172 (13 – 16) |
| | Walayar | 12.5 – 17.5 | 161 – 194 (15 – 18) | 140 – 151 (13 – 14) |

Source: Knight Frank Research

GUWAHATI

WAREHOUSING MARKET

- Guwahati is India's key warehousing market in the north-east. Being Assam's largest city, Guwahati is not only an important consumption market, it provides excellent access to neighboring states. Guwahati's road infrastructure provides easy connectivity to all the eight north-eastern states, besides to cities like Kolkata, Jalpaiguri, Shillong, Dibrugarh, Imphal and Aizawl.
- Guwahati is the largest metropolis in north eastern India with the manufacturing sector being the major driver of its local economy. Petroleum manufacturing is an important economic activity in Guwahati. Guwahati's old industrial estates are situated in locations such as Bamunimaidam and Kalaphar and comprise small and medium scale enterprises engaged in offset printing, steel fabrication, manufacture of carbon products, furniture, FMCG and plastics production.
- In line with other Tier 2 cities, Guwahati's small industrial estates of the past are paving the way for organised warehousing due to the city's potential to serve the neighboring Tier II and Tier III consumption markets. This has led occupiers from diverse sectors to set their warehousing base here. Between FY 2019 and FY 2023, warehouse leasing in Guwahati has only heightened with each passing year with FY 2023 achieving a five year high of 0.16 mn sq m (1.8 mn sq ft)
- Guwahati's prime warehousing clusters are located in the northern city limits, also known as North Guwahati. Many locations in this cluster beyond the Sairaghat Gate are suitable for warehousing activities. Due to land availability, self-use by industrial developers or build-to-suit (BTS) construction is being pursued in these pockets. Occupiers from sectors such as pharmaceutical, FMCG, FMCD and e-commerce have leased warehouses on this stretch. Locations along the National Highway 27 (NH 27) such as Amingaon, Changsari Chowk Gate and Madanpur remained occupier favorites in FY 2023 .
- The second prominent warehousing cluster in Guwahati is the National Highway 17 (NH 17). Palashbari and Azara are two key locations on this stretch. Proximity to the airport has been a major driver for attracting pharmaceutical companies to this belt. Many pharmaceutical

Between FY 2019 and FY 2023, warehouse leasing in Guwahati has only heightened with each passing year with FY 2023 achieving a five year high of 0.16 mn sq m (1.8 mn sq ft)

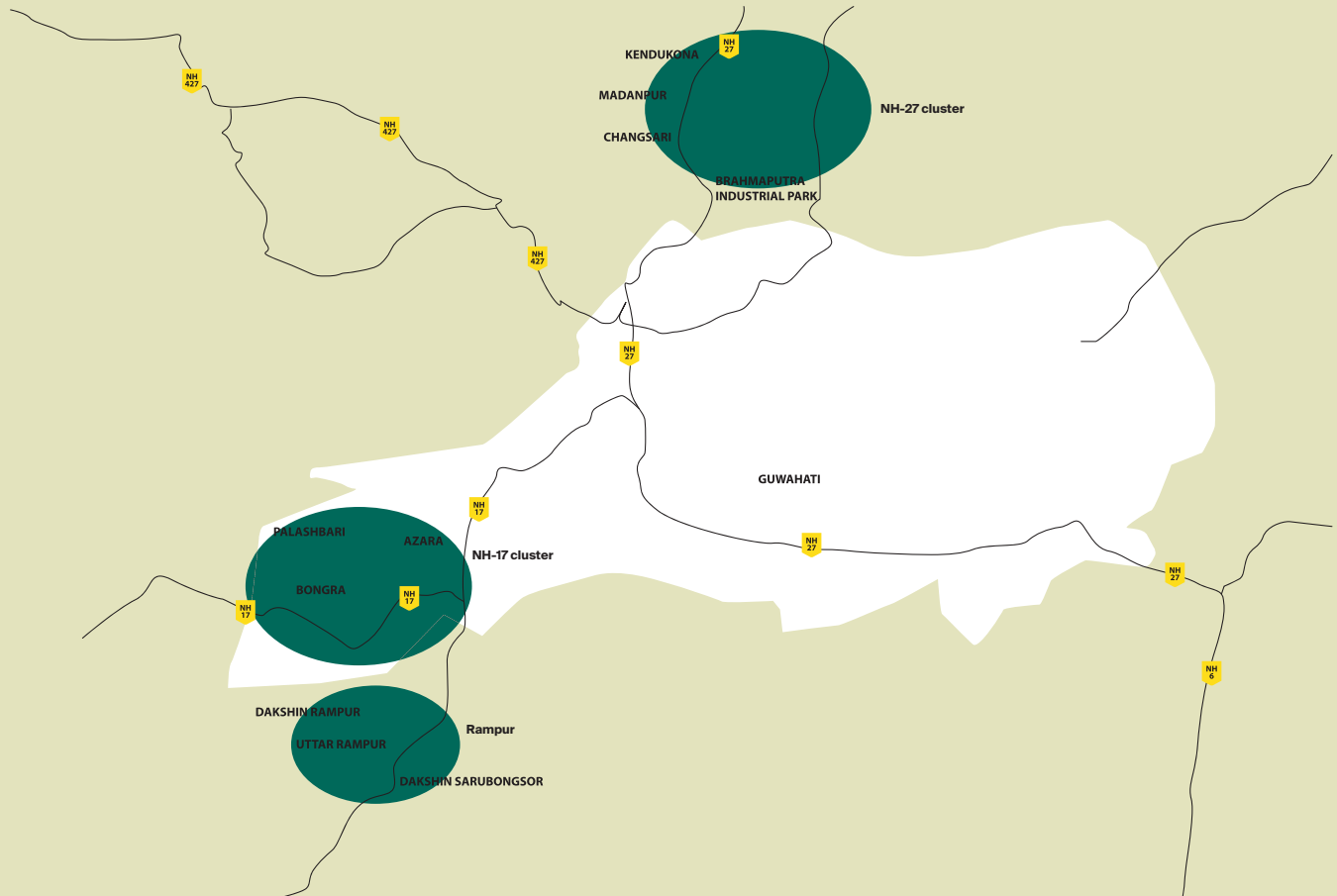
In the past five years including FY 2023, the warehousing space leased in Guwahati has scaled up at a compounded annual growth rate of nearly 36%. Of the total warehouse leasing in FY 2023, nearly 43% was leased in the NH 17 cluster

In terms of industry split, 3PL sector occupiers dominated the new warehouse leasing in FY 2023 with 67% share followed by manufacturing at 9%. The massive increase in the contribution of 3PL sector to the city's leasing volume is largely in line with the trend witnessed in several Tier 1 markets

occupiers such as the Sun-Pharma Brahmaputra Group and Natco Pharma, have established manufacturing facilities here.

- In the past five years including FY 2023, the warehousing space leased in Guwahati has scaled up at a compounded annual growth rate of nearly 36%. Of the total warehouse leasing in FY 2023, nearly 43% was leased in the NH 17 cluster. Locations such as Azara, Boragaon, Dharapur and Palashbari in this cluster, witnessed significant traction from 3PL and manufacturing sector occupiers. This was followed by NH 27 with 38% share. Rampur accounted for 19% share in this period as locations such as Pamohi attracted several occupiers from the manufacturing and 3PL sectors.
- Rampur is an emerging warehousing cluster in Kamrup rural district where the fast-track development of industries by the Assam Government and its declaration as an industrial zone, is contributing to warehousing demand pick up. The share of this cluster has expanded from 11% in FY 2022 to 19% in FY 2023's leasing pie.
- In terms of industry split, 3PL sector occupiers dominated the new warehouse leasing in FY 2023 with 67% share followed by manufacturing at 9%. The massive increase in the contribution of 3PL sector to the city's leasing volume is largely in line with the trend witnessed in several Tier 1 markets. An increasing need for e-commerce logistics and outsourcing of logistics requirements to 3PL operators has led to the rise in share of this occupier group.

Major warehousing locations in Guwahati



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|---------------------|---|
| NH 27 Cluster | Brahmaputra Industrial Park, Changsari, Madanpur, Kendukona |
| NH 17 Cluster | Bongra-Airport, Palashbari, Azara |
| Rampur | Dakshin Rampur, Uttar Rampur, Dakshin Sarubongsor |

Source: Knight Frank Research

Major infrastructure in Guwahati

| Name | Type |
|--|-----------|
| NH 27 Guwahati stretch | Road – NH |
| NH 17 Guwahati stretch | Road – NH |
| Lokpriya Gopinath Bordoloi International Airport | Airport |
| East West Corridor | Road |

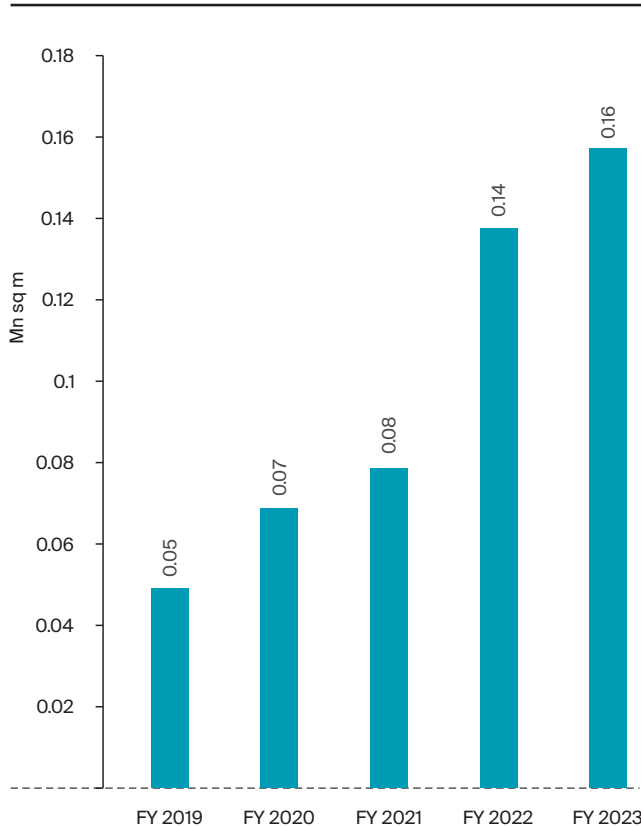
Source: Knight Frank Research | Note: NH stands for National Highway

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------------|-------------------|-------------------|
| Mahindra Logistics | 3PL | NH 17 Cluster |
| DHL | 3PL | NH 17 Cluster |
| Delhivery | 3PL | NH 17 Cluster |
| Godrej | FMCD | NH 27 Cluster |

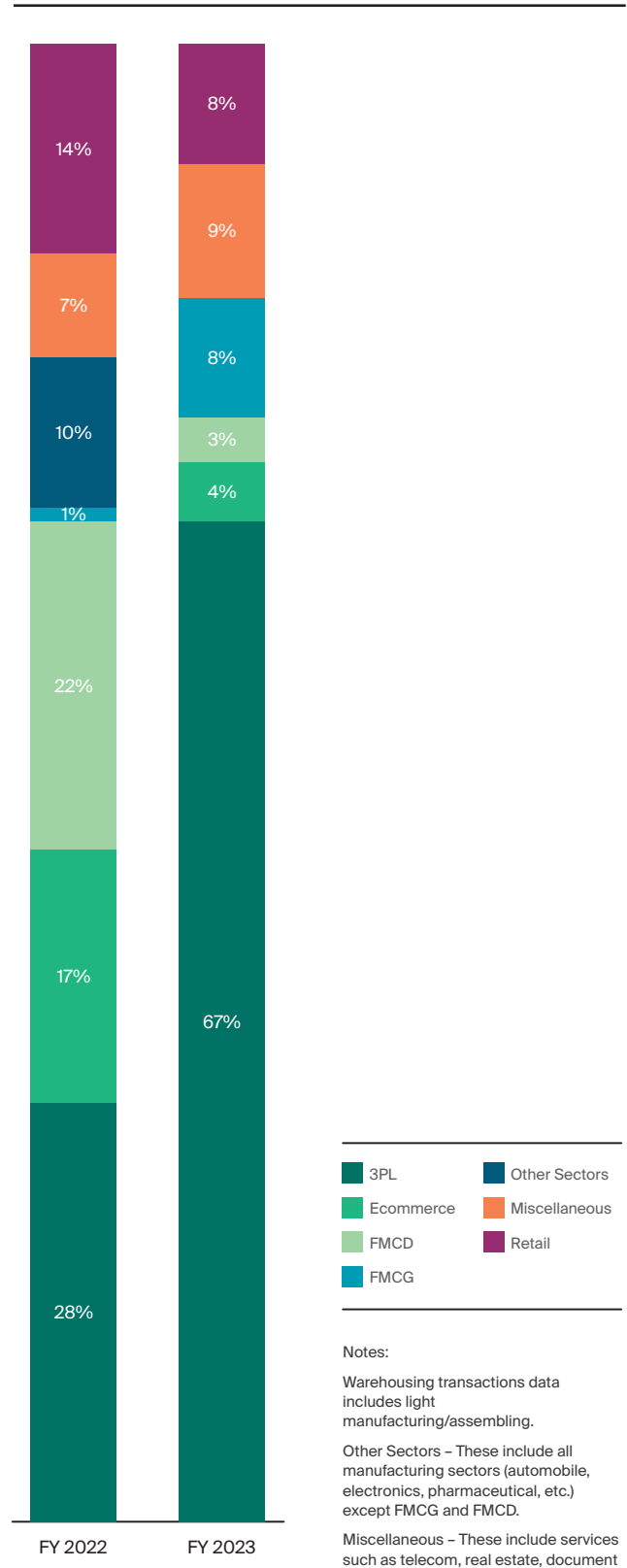
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

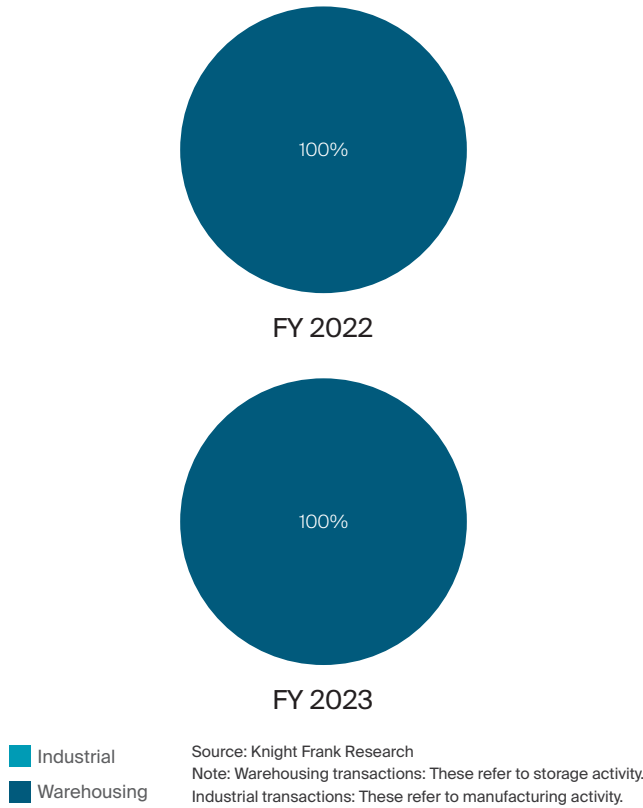
Notes:

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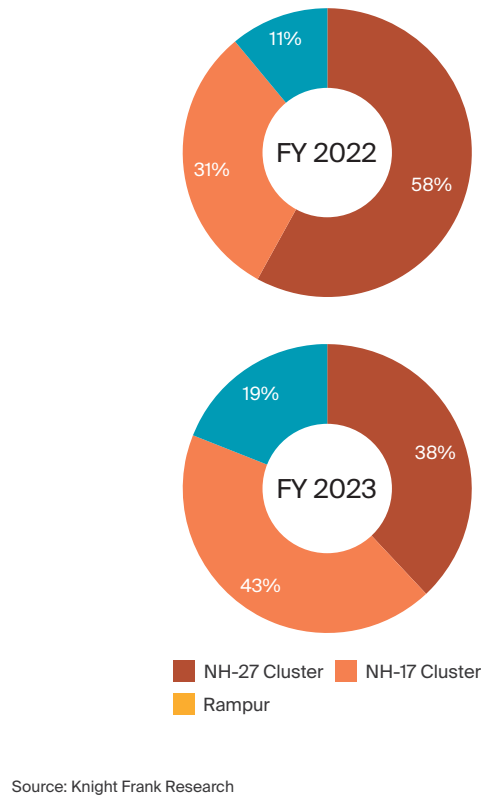
Other Sectors – These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous – These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------|-----------------------------|-------------------------|--|--|
| NH 27 Cluster | Brahmaputra Industrial Park | 30-40 | No Grade A | 183-205 (17-19) |
| | Changsari | 24-30 | 205-237 (19-22) | 183-205 (17-19) |
| | Madanpur | 24-30 | 205-237 (19-22) | 183-205 (17-19) |
| | Kendukona | 18-25 | 194-226 (18-21) | 172-194 (16-18) |
| NH 17 Cluster | Bongra-Airport | 30-45 | 226-248 (21-23) | 205-226 (19-21) |
| | Palashbari | 28-36 | 226-248 (21-23) | 183-205 (17-19) |
| | Azara | 28-36 | 226-248 (21-23) | 183-205 (17-19) |
| Rampur | Dakshin Rampur | 22-28 | 194-226 (18-21) | 161-183 (15-17) |
| | Uttar Rampur | 22-28 | 194-226 (18-21) | 161-183 (15-17) |
| | Dakshin Sarubongsor | 19-24 | 194-215 (18-20) | 161-183 (15-17) |

Source: Knight Frank Research

HYDERABAD

WAREHOUSING MARKET

- Warehousing activity in Hyderabad is largely concentrated in three major clusters: Medchal cluster in the north located along the Hyderabad-Nagpur highway, the Patancheru cluster in the west on the Mumbai-Hyderabad highway, and the Shamshabad cluster in the south located along the Bengaluru-Hyderabad highway.
- The demand for warehousing continues to be dominant in the Medchal cluster, whose share has increased marginally from 60% in FY 2022 to 61% in FY 2023.
- The Shamshabad cluster and Patancheru cluster have observed almost the same trend in activity as compared with the previous year. The Shamshabad cluster witnessed a marginal decline in its share of transactions from 30% in FY 2022 to 27% in FY 2023. Notably, three of the top five transactions in the Hyderabad market occurred in the Shamshabad cluster during FY 2023. The Patancheru cluster experienced a marginal increase in its share of transactions from 10% in FY 2022 to 11% during FY 2023.
- Transaction activity in the Hyderabad warehousing market has been resilient with the manufacturing sector having the largest share in the occupier transaction pie. Overall, transactions have marginally declined by 7% YoY, from 0.50 mn sq m (5.4 mn sq ft) in FY 2022 to 0.47 mn sq m (5.1 mn sq ft) in FY 2023. However, it must be noted that transactions in the previous financial year had increased sharply by 128% YoY to reach record volumes of 0.50 mn sq m (5.4 mn sq ft). Hence, despite the slight YoY decline in transaction volumes during the current analysis period, they are still higher than any previous period except FY 2022.
- In FY 2023, the highest transactions were recorded by manufacturing companies. Schemes undertaken by the central and state governments to promote manufacturing such as Make in India, and the floating of Production Linked Incentive (PLI) schemes have augured well for the Hyderabad markets. Most of the occupiers within the manufacturing space are from the pharmaceuticals, paints, electricals and equipment manufacturing industries. The demand from manufacturers has increased sharply by 98% YoY in absolute volumes to 0.18 mn sq m (2.0 mn sq ft) during FY 2023.

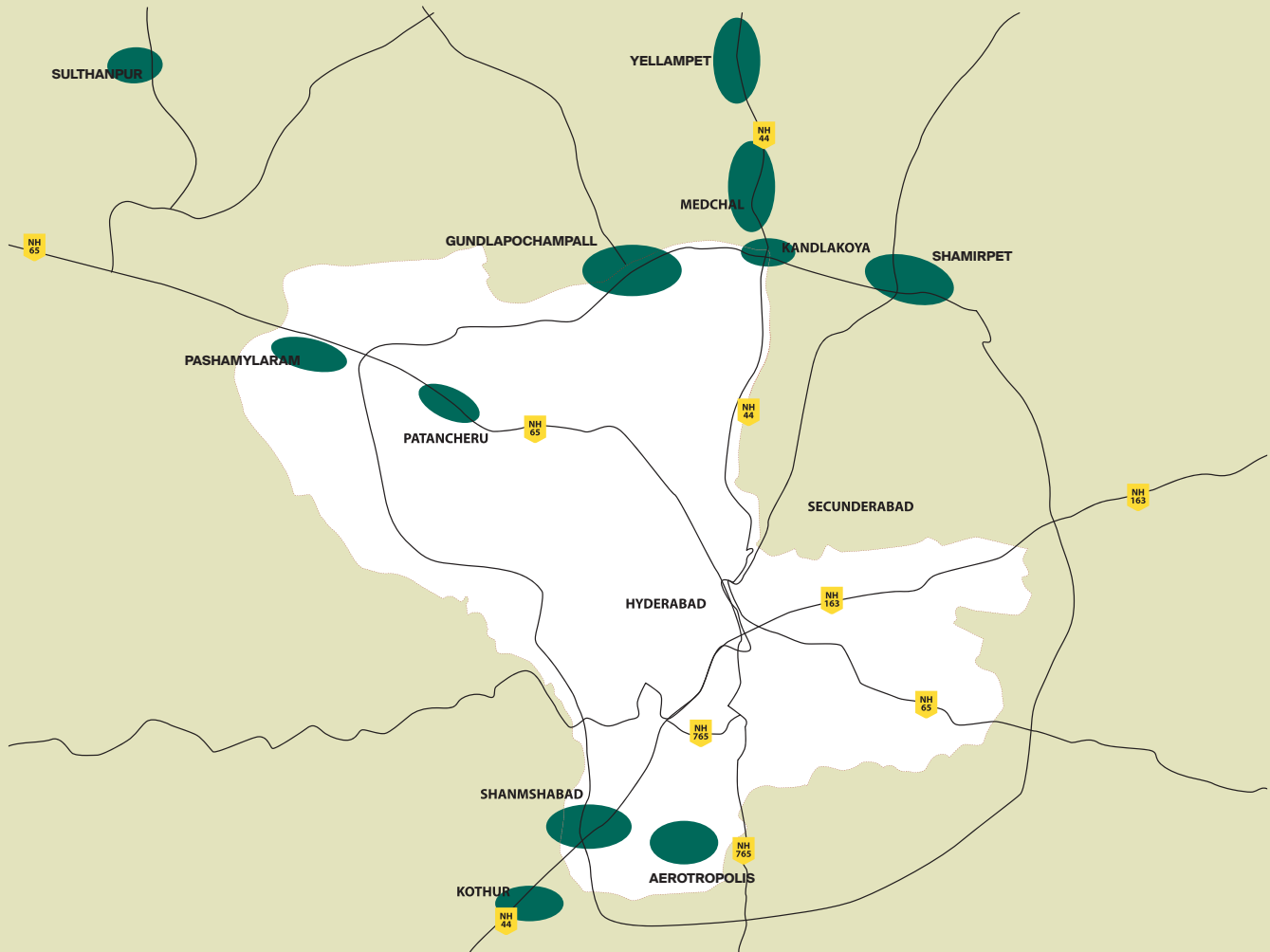
Transaction activity has been resilient witnessing leasing volumes of 0.47 mn sq m (5.1 mn sq ft)

In FY 2023, the highest transactions were recorded by manufacturing companies.

The demand for warehousing continues to be dominant in the Medchal cluster.

- While the share of manufacturing sector companies has increased from 18% in FY 2022 to 39% in FY 2023, 3PL and e-commerce transactions have reduced significantly from 32% in FY 2022 to 21% in FY 2023, and from 28% in FY 2022 to 17% in FY 2023 respectively. The share percentage of FMCG and FMCD transactions have remained constant in both the financial years at 5% and 1% respectively, whilst the retail sector experienced a slight decline from 15% in FY 2022 to 14% in FY 2023.
- The reduction in share of 3PL and e-commerce transactions can be attributed largely to the excess capacity these sectors had built up during the pandemic as the demand for storage had spiked at the time.
- During FY 2023, land rates have increased significantly in the Shamshabad and Medchal clusters, whereas rentals have remained largely steady across locations in the three warehousing clusters.
- Warehousing demand from the manufacturing sector is slated to increase considering many of the sectors that have been granted approvals under the PLI scheme will be based out of Hyderabad, and many global players in the mobile phone manufacturing and auto-ancillary space have signed MOUs with the Telangana government. The temporary dip in transactions from 3PL and e-commerce occupiers will not impact long-term demand prospects considering the popularity of online shopping and the need for last mile delivery is slated to continue.

Major warehousing locations in Hyderabad



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|----------------------------|---|
| Medchal cluster (North) | Medchal, Devaryamjal, Gundlapochampally, Kandlakoya, Yellampet, Shamirpet, Outer Ring Road onwards, Bandmailaram, Pudur, Toopran, Manoharabad |
| Patancheru cluster (West) | Patancheru Industrial Area, Rudram, Edulanagulapally, Pashamylaram, Sulthanpur, Sangareddy |
| Shamshabad cluster (South) | Shamshabad, Aerotropolis, Srisailam Highway, Bongloor, Kothur, Shadnagar |

Source: Knight Frank Research

Major infrastructure in Hyderabad

| Name | Type |
|---|---------|
| Outer Ring Road | Road |
| Inner Ring Road | Road |
| Bengaluru-Hyderabad Highway/NH 44 | Road |
| Mumbai-Hyderabad Highway/NH 65 | Road |
| Nagpur-Hyderabad Expressway | Road |
| Rajiv Gandhi International Airport (Aerotropolis) | Airport |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|---------------------------------------|------------------------|
| ESR GMR Industrial & Logistics Park | Shamshabad |
| Zero Mile Warehousing | Patancheru, Medchal |
| Allcargo Logistics & Industrial Parks | Patancheru |
| Horizon Industrial Parks | Patancheru, Shamshabad |
| Musaddilal Projects | Medchal |
| Aruna Warehousing | Medchal |

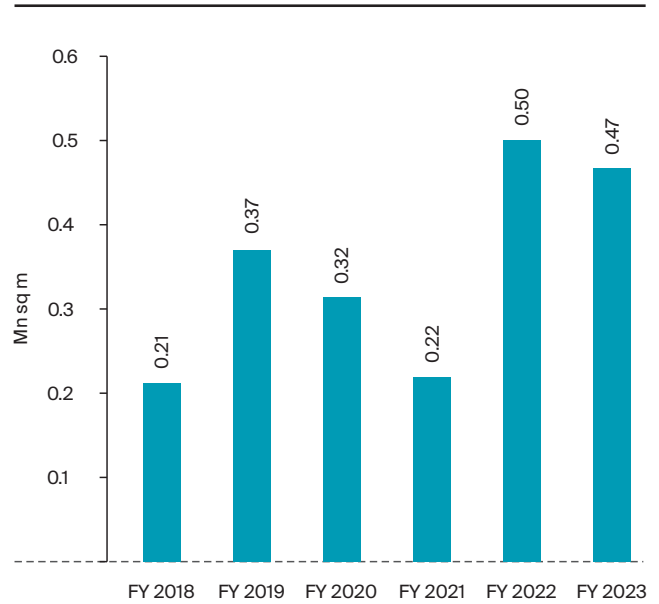
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|---------------------------------|-------------------|-------------------|
| Flipkart | Ecommerce | Patancheru |
| Skyroot Aerospace Manufacturing | | Shamshabad |
| Reliance | Retail | Shamshabad |
| Xpressbees | 3PL | Medchal |
| Schneider | Manufacturing | Shamshabad |

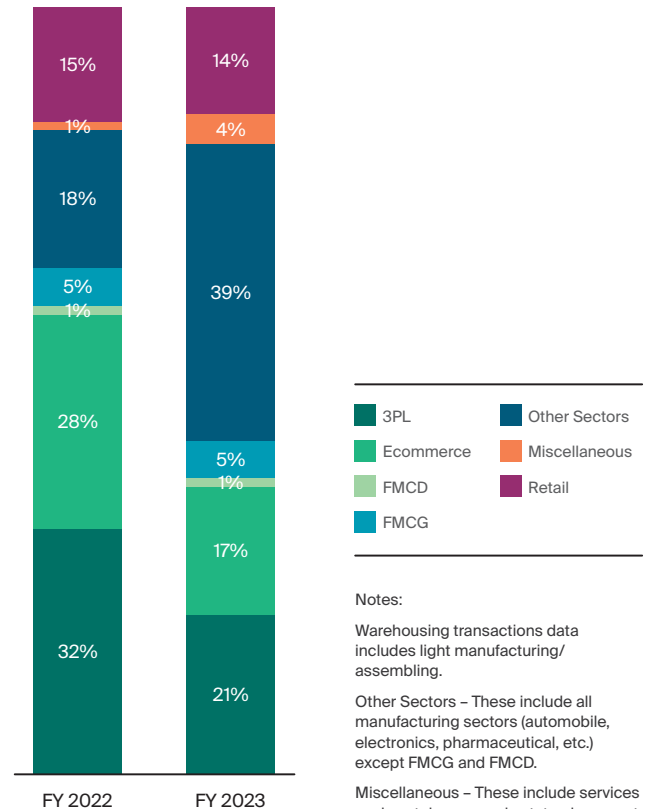
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

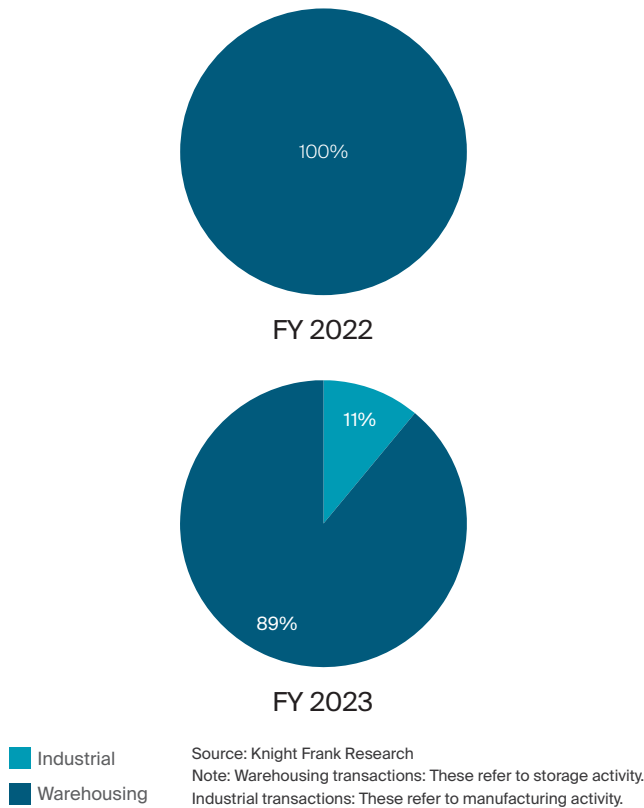
Notes:

Warehousing transactions data includes light manufacturing/ assembling.

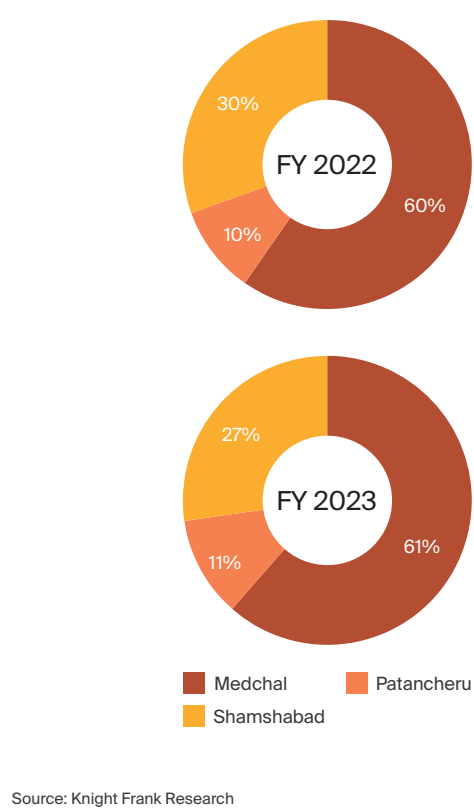
Other Sectors – These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous – These include services such as telecom, real estate, document management, agricultural warehousing, and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|--------------------|---------------------------------|-------------------------|--|--|
| Medchal cluster | Medchal | 20 - 35 | 205 - 226 (19 - 21) | 183 - 205 (17 - 19) |
| | Devaryamjal - Gundlapochampally | 20 - 28 | 205 - 226 (19 - 21) | 183 - 205 (17 - 19) |
| | Kandlakoya | 20 - 28 | 205 - 226 (19 - 21) | 183 - 205 (17 - 19) |
| | Yellampet | 20 - 28 | 205 - 226 (19 - 21) | 183 - 205 (17 - 19) |
| | Shamirpet | 20 - 28 | 205 - 215 (19 - 21) | 183 - 205 (17 - 19) |
| Patancheru cluster | Patancheru Industrial Area | 20 - 45 | 205 - 215 (19 - 20) | 183 - 205 (17 - 19) |
| | Rudram | 19 - 45 | 205 - 215 (19 - 20) | 183 - 205 (17 - 19) |
| | Pashamylaram | 19 - 45 | 205 - 215 (19 - 20) | 183 - 205 (17 - 19) |
| | Edulanagulapally | 18 - 45 | 205 - 205 (19 - 19) | 172 - 194 (16 - 18) |
| | Sulthanpur | 18 - 45 | 205 - 205 (19 - 19) | 172 - 194 (16 - 18) |
| Shamshabad cluster | Aerotropolis | 20 - 25 | 205 - 226 (19 - 21) | 172 - 194 (16 - 18) |
| | Srisailam Highway | 20 - 25 | 205 - 226 (19 - 21) | 172 - 194 (16 - 18) |
| | Bongloor | 20 - 25 | 205 - 226 (19 - 21) | 172 - 194 (16 - 18) |
| | Kothur | 20 - 25 | 205 - 226 (19 - 21) | 172 - 194 (16 - 18) |
| | Shadnagar | 21 - 25 | 205 - 226 (19 - 21) | 172 - 194 (16 - 18) |

Source: Knight Frank Research

INDORE

WAREHOUSING MARKET

- Indore is the commercial capital of Madhya Pradesh with a high quality of workforce in the state. Along with its satellite towns Pithampur and Dewas, it is one of the fast-growing economic regions of India. The city is located along NH 47 Mumbai-Agra Highway. The Rau-Pithampur cluster is located on the southern end which connects Indore with Nasik and Mumbai, and the Indore-Dewas Road belt on the northern end connects it with Bhopal.
- Pithampur is a manufacturing cluster dominated by the automobile sector. The primary warehousing demand of Pithampur is catered to by the captive facilities of these companies. There are also a few standalone warehousing properties, but their demand base is majorly industries within Pithampur and their ancillaries/vendors. The Pithampur cluster has been identified by the Central Government for implementation of the Industrial Infrastructure Up-gradation Scheme (IIUS). The scheme aims at improving the competitiveness of functional clusters across the country. The cluster falls under the Delhi Mumbai Industrial Corridor (DMIC) influence region and has India's first green field operational SEZ.
- Dewas is a key industrial township located approximately 30 km from Indore. The warehousing demand was primarily concentrated in the Indore-Dewas cluster comprising 81% share of the leasing volume in FY 2023. Due to its proximity to the city center, the occupiers in this cluster primarily comprised those catering to discretionary consumption such as Retail, FMCD and the 3PL players, facilitating the logistics and supply chain. The cluster has good infrastructure support with 3x3 lane roads. Dewas Naka was the first warehousing cluster of the city. The land parcels in this region are expensive due to the expansion of city limits.
- The other warehousing cluster, the Nemawar Road cluster, is located along the Indore-Nagpur Highway, majorly capturing agricultural related demands. A small amount of warehousing supply is also available near the Indore airport which caters to air cargo as well as in-city distribution networks.
- Owing to its strengthening economic profile, the demand for warehousing in Indore has

Indore recorded a warehousing transaction volume of 0.14 mn sq m (1.5 mn sq ft) in FY 2023.

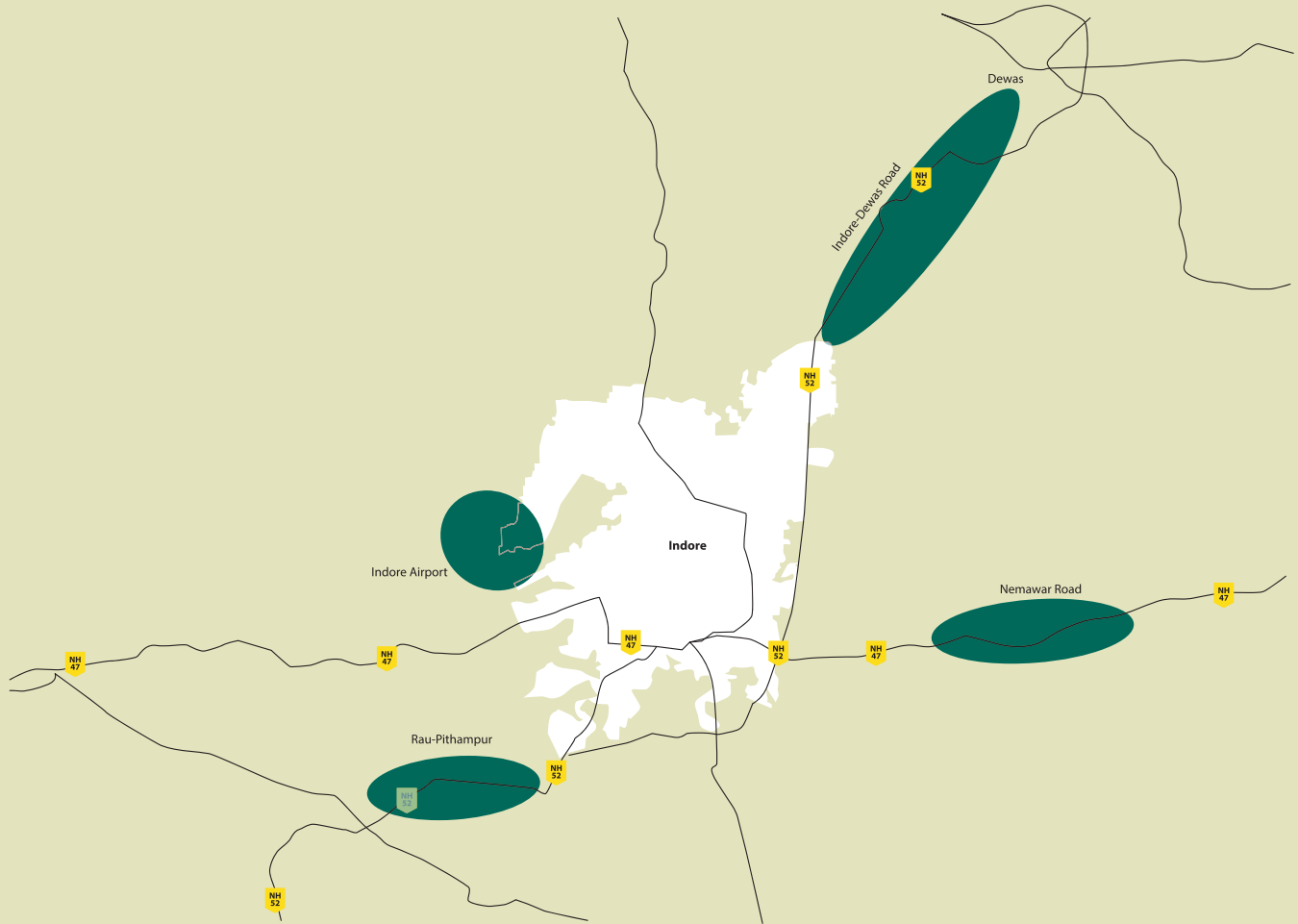
Demand for warehousing space was driven by manufacturing occupiers comprising 51% of the overall transaction volume in the Indore during FY 2023.

Tenancy in Indore market was led by Grade A warehouses which comprised a share of 64% of the leasing volume.

substantially increased in the last few years. Indore recorded a warehousing transaction volume of 0.14 mn sq m (1.5 mn sq ft) in FY 2023, a 208% growth from 0.05 mn sq m (0.5 mn sq ft) witnessed in FY 2019. In FY 2023, the demand for warehousing space was driven by manufacturing occupiers which comprised 51% of the overall transaction volume in the Indore market. Occupiers such as Hyundai Mobs, Havells and Imperial Auto were some of the largest players who leased warehousing space in Indore.

- Indore market has huge growth potential. To attract the occupiers, developers in the region – both national as well as local – have developed Grade A built-to-suit warehousing infrastructure for the convenience of the occupiers. In FY 2023, the tenancy in Indore market was led by Grade A warehouses which comprised a share of 64% of the leasing volume.
- In early 2023, Indore was awarded with a multi modal logistics park (MMLP) to be developed in an area of 255.17 acre near Pithampur in Dhar district in Madhya Pradesh, which is targeted to be completed in 2025. Indore MMLP is expected to cater to 112.8 million metric ton (MMT) cargo over a period of 45 years and will give a huge boost to the industrial zones in the catchment regions of Indore, Ujjain, Dewas, Dhar, Pithampur, Khandwa and Barwani. Additionally, this will generate employment which in turn would boost consumption demand, further providing impetus to warehousing opportunities in the region.

Major warehousing locations in Indore



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|---------------------|---|
| Rau-Pithampur | Sonway, Rau, Pithampur |
| Indore-Dewas Road | Dewas Naka, Dhakachya, Indore bypass road |
| Others | Near Indore Airport, Nemawar Road |

Source: Knight Frank Research

Major infrastructure in Indore

| Name | Type |
|---|---------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Industrial corridor |
| Indore-Dewas-Ujjain railway line | Railway |
| Mumbai Agra highway | Highway |
| International air cargo service | Airport |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--|-------------------|
| Adani Logistics Park | Rau-Pithampur |
| JRG Logistics Park | Indore-Dewas Road |
| Empire Logipark | Indore-Dewas Road |
| Lifecare Logistics Park | Indore-Dewas Road |
| S.B. Warehousing & Logistics Pvt. Ltd. | Indore-Dewas Road |

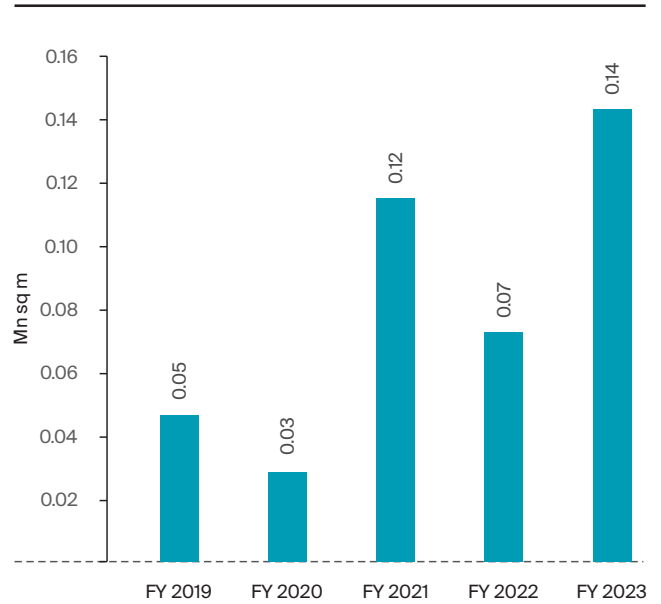
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------------------|-------------------|-------------------|
| Hyundai Mobis | Automobile | Rau-Pithampur |
| Havells | Manufacturing | Indore-Dewas Road |
| Delhivery | 3PL | Indore-Dewas Road |
| Samsung | FMCD | Indore-Dewas Road |
| Abbott Health Care (LCI) | Pharma | Indore-Dewas Road |

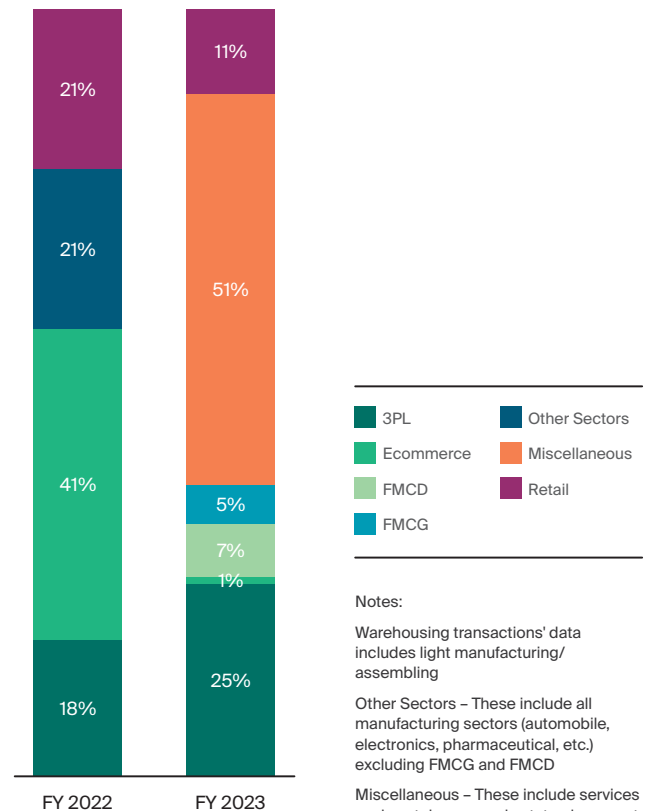
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

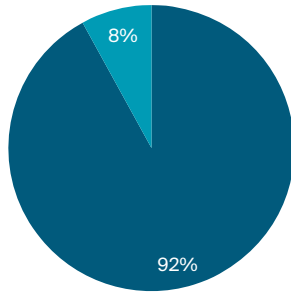
Notes:

Warehousing transactions' data includes light manufacturing/ assembling

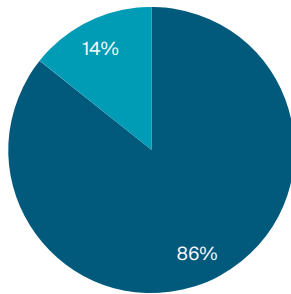
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) excluding FMCG and FMCD

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing

Transaction share by end-use of space



FY 2022

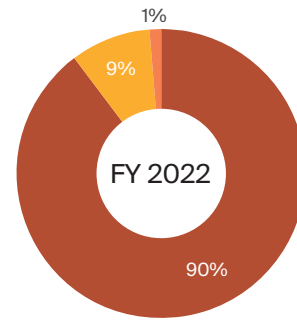


FY 2023

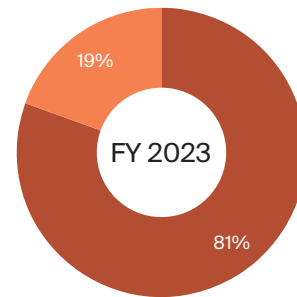


Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

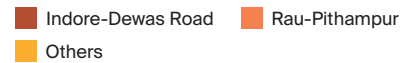
Cluster-split of transaction



FY 2022



FY 2023



Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------|---------------------|-------------------------|--|--|
| Indore-Dewas Road | Indore-Dewas Road | 25-50 | 205-248 (19-23) | 140 – 183 (13-17) |
| | Bypass Road | 30-70 | 226-269 (21-25) | 172-215 (16-20) |
| Rau-Pithampur | Rau | 30-70 | 226-269 (21-25) | 183-215 (17-20) |
| | Pithampur | 17-35 | 194-237 (18-22) | 150-194 (14-18) |
| Others | Near Indore Airport | NA | 205-248 (19-23) | 162-183 (15-17) |
| | Nemawar Road | 25-70 | 226-258 (21-24) | 150-194 (14-18) |

Source: Knight Frank Research

JAIPUR

WAREHOUSING MARKET

- Among the 10 most populous cities of India, Jaipur is also Rajasthan's largest city situated within 300 kms from the national capital of Delhi with excellent road connectivity through National Highway 48. This highway also connects Jaipur with cities such as Ahmedabad, Ajmer, Kishangarh and Jodhpur. The Jaipur-Kishangarh Expressway on this highway was the first Indian road built under the public-private partnership model and provides seamless connectivity between these two cities. Jaipur is also well-connected to Kota, Bikaner and Agra through other national highways passing through the city.
- The presence of this robust road network that connects Jaipur to northern, north-western and western cities has made the city an important one from the logistics standpoint and aided its warehousing market development. Having a well-developed textile industry and being a major tourism destination, a substantial part of the storage requirement in the erstwhile years was from the textile manufacturers and FMCG companies, apart from other fledgling industries. A bulk of the city's industrial establishments and factories are concentrated across Vishwakarma Industrial Area (VKI), Sitapura, Bais Godam, Sudarshanpura, Mansarovar, Jaitpura and Bagru. Recent years have seen the advent of organized warehousing development with Grade A structures and build-to-suit (BTS) facilities across the city, especially along the alignment of the Ajmer Road (NH 48) up to Kishangarh.
- Strong demand from the 3PL and e-commerce occupier segments has ensured steady growth in transaction volumes in Jaipur's growing warehousing market during the FY 2019 to FY 2022 period. A sharp spike in expansion by these sectors during FY 2022 in anticipation of increasing consumer demand drove market volumes to record highs during the year. However, this speculative uptake caused some excess capacity to be built up in FY 2023 resulting in negligible participation from 3PL players. The overall transaction volumes have thus dropped 37% YoY to 0.08 mn sq m (0.9 mn sq ft) in FY 2023.
- While 3PL players have not shown significant leasing activity during the year, e-commerce companies have continued to expand operations steadily. Flipkart's 0.04 mn sq m (0.4

Overall transaction volumes have dropped 37% YoY to 0.08 mn sq m (0.9 mn sq ft) in FY 2023 due to negligible participation from 3PL sector during the year

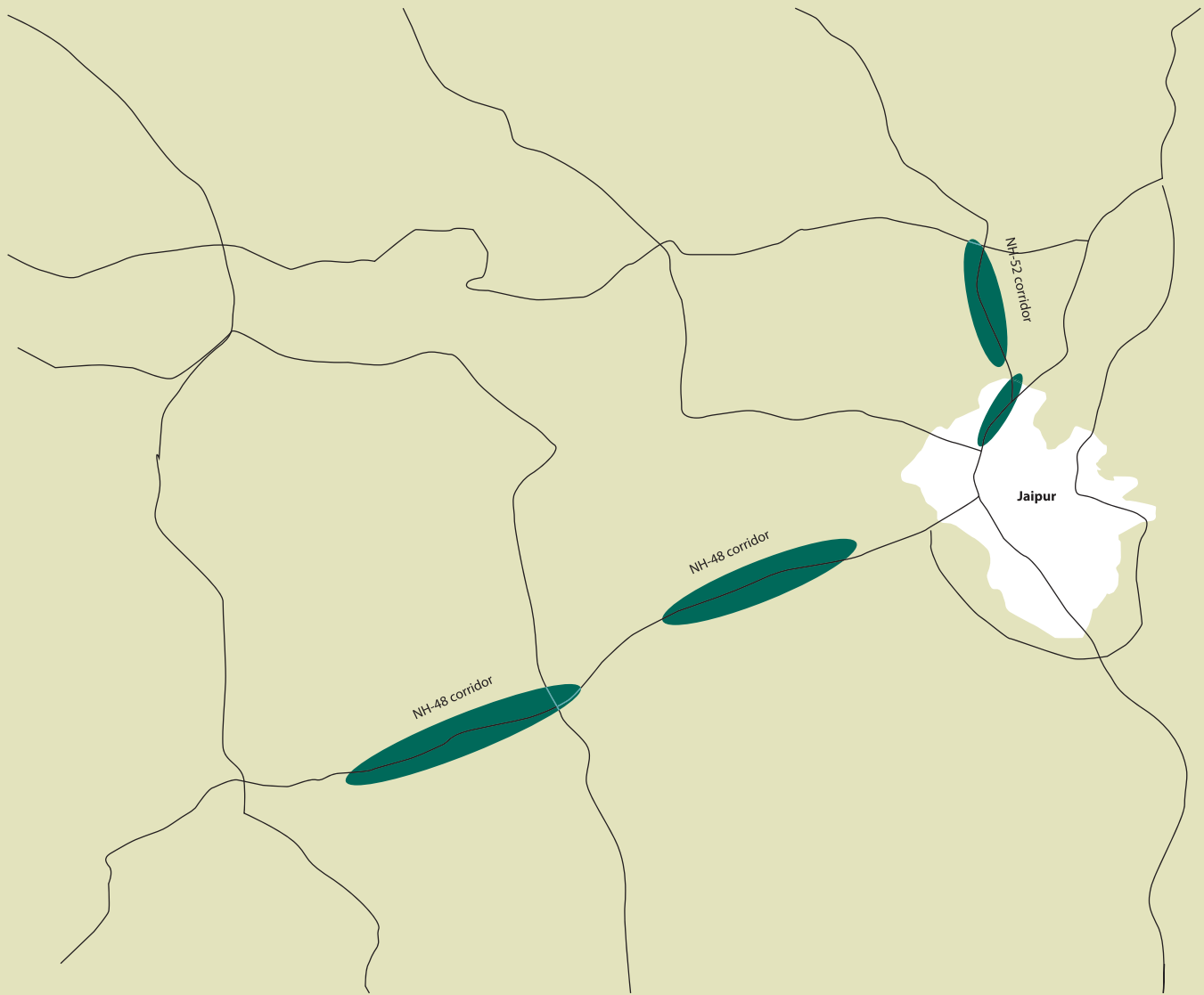
Flipkart's 0.04 mn sq m (0.4 mn sq ft) was the largest lease signed in FY 2023 and accounted for nearly half the transacted volume during the year

Rents in Jaipur have grown marginally in FY 2023 and are expected to stay buoyant

mn sq ft) was the largest lease signed in FY 2023 and accounted for nearly half the transacted volume during the year. The retail sector was the other occupier group to feature prominently during FY 2023 with players like Tata Trent pushing the sector's share to 29% in this period. The e-commerce and retail sectors took up 86% of the total transacted volume with the balance well distributed among FMCG, FMCD and manufacturing (other sectors) companies. All of the transactions took place on the NH 48 corridor in locations such as NH-48 (Ajmer Road), Bagru and Mahindra World City.

- The near absence of the 3PL sector during the year has had a telling impact on market volumes in FY 2023. While the excess capacities of this sector are taking longer than expected to get taken up, the healthy number of enquiries continuing to float in the market indicate toward a return of 3PL companies in the warehousing market in the next few months. With delivery timelines getting constricted as customer expectations build up, the need for smaller warehousing spaces closer to consumption centers is increasing. This would also enable a more distributed stocking so that deliveries are not hampered in the event of major disruptions such as those caused by the pandemic over the past two years. The increasing development of Grade A warehousing facilities in areas such as Sikar Road will further enhance Jaipur's standing as an emerging warehousing market.
- While transacted volumes have dropped, rents in Jaipur have grown marginally in FY 2023 and are expected to stay buoyant as input costs have increased and the demand is expected to pick up in the following year.

Major warehousing locations in Jaipur



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|---------------------|---|
| NH-48 corridor | Mahindra World City, Bagru, Ajmer Road |
| NH-52 corridor | Vishwakarma Industrial Area, Jhotwara, Sikar Road |

Source: Knight Frank Research

Major infrastructure in Jaipur

| Name | Type |
|---|---------|
| Jaipur Ring Road (Phase I) | Road |
| Delhi-Mumbai Highway (NH-48) | Road-NH |
| Sangrur-Ankola Highway (Sikar Road) (NH-52) | Road-NH |
| Jaipur-Agra Highway (NH-21) | Road-NH |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|---------------------------------|-----------------------------|
| Jaipur Leasing Company | NH-52 Corridor (Sikar Road) |
| Jaipur Leasing Company | NH-48 Corridor (Bagru) |
| Zapp India | NH-52 Corridor (Sikar Road) |
| Mahima Group | NH-48 Corridor (Ajmer Road) |
| TVS Industrial & Logistics Park | NH-48 Corridor (Daultapura) |

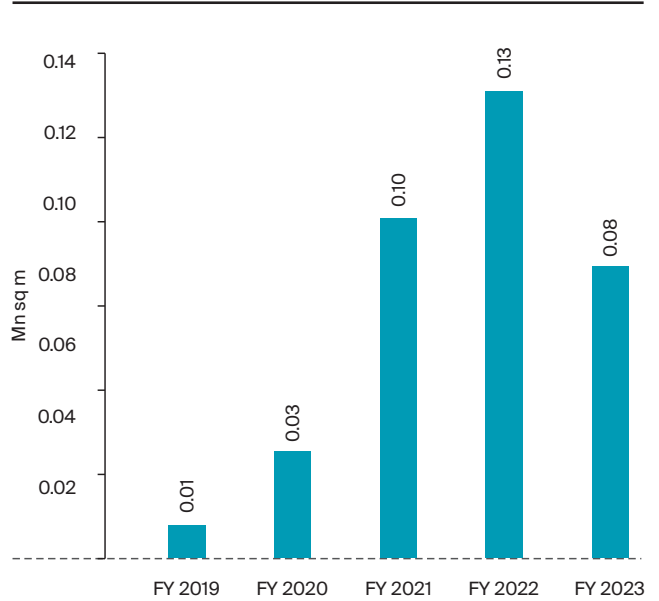
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry |
|-------------------|-------------------|
| Flipkart | E-commerce |
| Tata Trent | Retail |
| Samsung | FMCD |
| Reliance Fresh | Retail |
| Colgate Palmolive | FMCG |

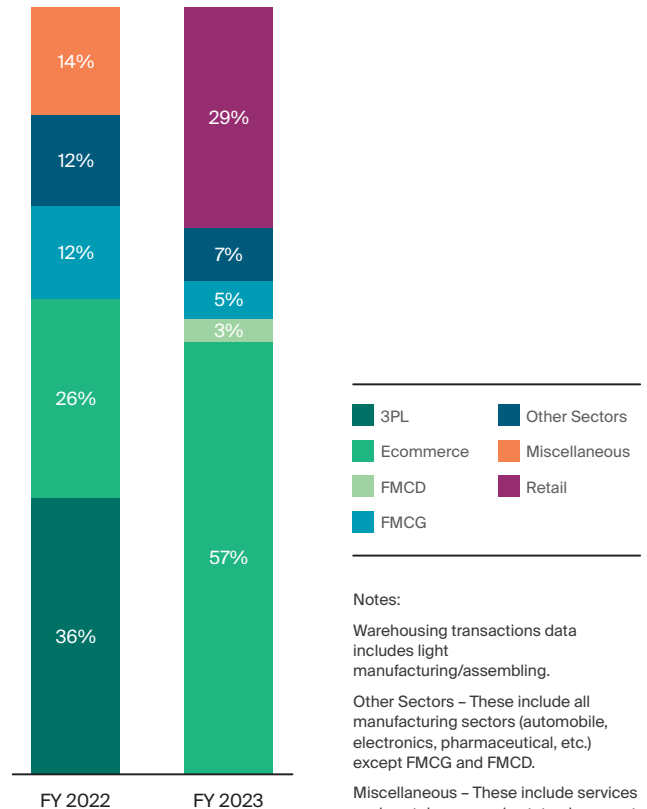
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

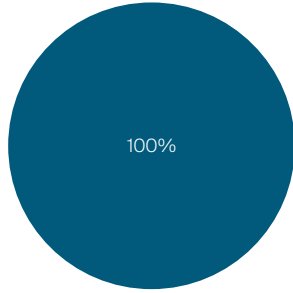
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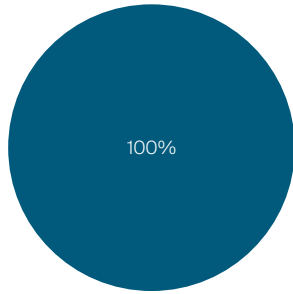
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Transaction share by end-use of space



FY 2022

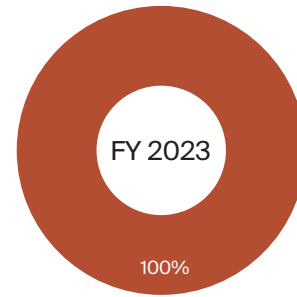
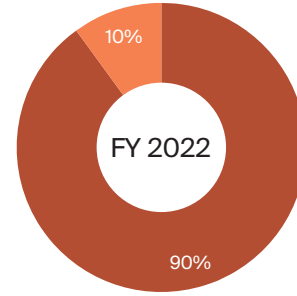


FY 2023

- Industrial
- Warehouseing

Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



- NH 48 Corridor
- NH 52 Corridor

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------|-----------------------------|-------------------------|--|--|
| NH-48 Corridor | Mahindra World City | 35-40 | 236-270 (22-25) | 236-270 (22-25) |
| | Bagru | 20-30 | 215-236 (20-22) | 215-236 (20-22) |
| | Dudu | 13-16 | 193-215 (18-20) | 193-215 (18-20) |
| NH-52 Corridor | Vishwakarma Industrial Area | 150 - 200 | 270-322 (25-30) | 270-322 (25-30) |
| | Jhotwara | 120-150 | 270-322 (25-30) | 270-322 (25-30) |
| | Sikar Road | 20-30 | 236-270 (22-25) | 236-270 (22-25) |

Source: Knight Frank Research

KOLKATA

WAREHOUSING MARKET

- Kolkata is India's key warehousing and logistics frontier serving the primary consumption requirements of all eastern and north-eastern states. Kolkata's transport network along with well established peripherals, helps it to serve the needs of all catchment areas near West Bengal and other states. The evolution of industrial corridors on the national highways near Kolkata and the Goods and Services Tax (GST) implementation have sustained warehousing space demand in its well-developed warehousing clusters.
- Kolkata's warehousing demand is largely concentrated in two major warehousing clusters: Dankuni and its suburbs, and the National Highway 16 (Old NH 6); both are well-connected to the city which is only 25-30 kms away. Investors and developers have continually scouted for Grade A warehousing development opportunities in these clusters, as they provide easy access to the nearby districts of Howrah and Hooghly.
- In FY 2023, 0.47 mn sq m (4.3 mn sq ft) warehousing space was leased in Kolkata, a historic annual high in the past 6 years. Kolkata has registered a 18% year on year (YoY) upswing over the warehousing space leased in FY 2022, which is the second highest annual increase across the top eight markets in FY 2023. In the past six years, Kolkata has emerged as a top performing warehousing market in India with the market getting organized gradually in terms of availability of warehousing stock. However, the lack of Grade A warehousing supply in locations of occupier interest can create a challenge for some players to lease spaces.
- Of the total warehouse space leased in FY 2023, National Highway 16 (Old NH 6) accounted for the lion's share with 64%. The share of this cluster in the city's warehouse leasing volume expanded from 59% in FY 2022 to 64% due to some large deals by occupiers from retail, e-commerce and manufacturing occupiers in locations such as Amta Ranihati Road, Jangalpur, Dhulagarh and Uluberia. However, the share of Dankuni and its suburbs moderated slightly from 36% in FY 2022 to 33% in FY 2023. The remaining 3% was leased in the Madhyamgram-Barasat belt. The prominence of National Highway 16 (Old NH 6) in Kolkata continues to increase due to availability of Grade A spaces which is a key catalyst for new occupier transactions in this warehousing cluster.
- National Highway 16 (Old NH 6) is a much

In FY 2023, 0.47 mn sq m (4.3 mn sq ft) warehousing space was leased in Kolkata, a historic annual high in the past 6 years. Kolkata has registered an 18% YoY upswing over the warehousing space leased in FY 2022, which is the second highest annual increase across the top eight markets in FY 2023.

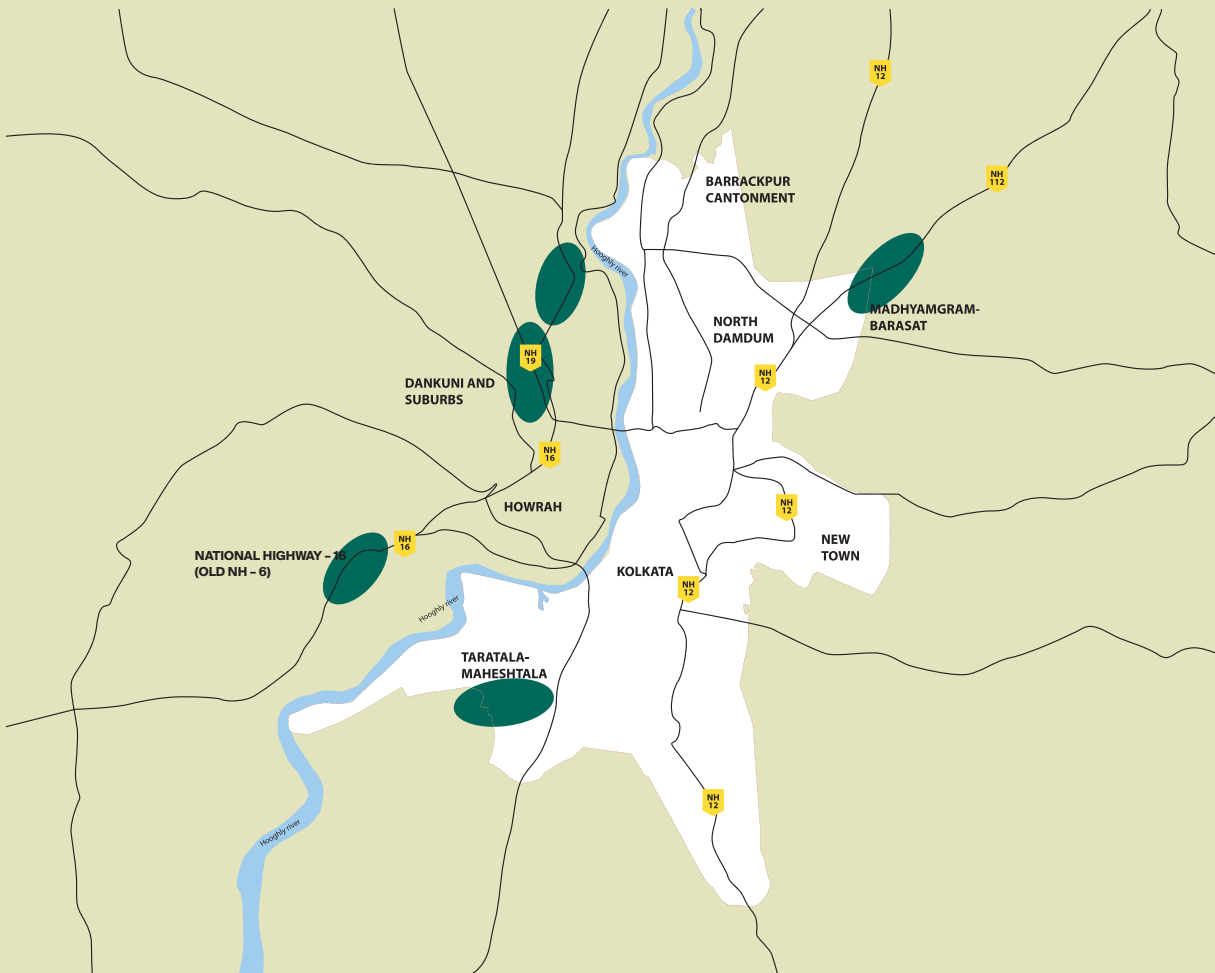
Of the total warehouse space leased in FY 2023, National Highway 16 (Old NH 6) accounted for the lion's share with 64%. The share of this cluster in the city's warehouse leasing volume expanded from 59% in FY 2022 to 64% due to large deals by occupiers from retail, e-commerce and manufacturing occupiers in locations such as Amta Ranihati Road, Jangalpur, Dhulagarh and Uluberia.

Unlike past trends, 3PL emerged as the top occupier sector accounting for 28% of the total transaction volume in FY 2023. The manufacturing and retail sector occupiers commanded 24% and 19% share respectively.

sought after warehousing cluster in the region. This is largely due to the fact that it is a six-lane wide highway populated with high specification Grade A warehouses. Many private players have expanded here as it provides excellent connectivity to Bangan, Jangalpur, Alampur, Kharagpur, and ultimately to Mumbai. Sankrail on this node is an established warehousing hub for consumer goods and is located just outside the city limits with transit hubs in the nearby Bardhaman-Durgapur belt. However, availability of land for new facilities is a challenge here. Connectivity to the Haldia Port has also made it a much sought-after location for 3PL players, as many huge vessels carrying freight from other countries dock at the Haldia Dock Complex.

- Dankuni and its suburbs is also a prime warehousing cluster comprising key locations of Durgapur Expressway and the Old Delhi Road (NH 19 [Old NH 2]). Easy access to labour and raw materials, and connectivity through both national highways has made it a popular location for transportation and third party logistics occupiers. The currently under construction Eastern Dedicated Freight Corridor (EDFC) is a freight exclusive project for rail transport between Ludhiana and Dankuni which is a key enabler for intermodal logistics and warehousing.
- Unlike past trends, 3PL emerged as the top occupier sector accounting for 28% of the total transaction volume in FY 2023. Manufacturing and retail sector occupiers commanded a 24% and 19% share respectively. E-commerce, witnessed a drop in its share from 26% in FY 2022 to 12% in FY 2023. Demand for new warehousing facilities by e-commerce sector has shrunk in FY 2023 after aggressive expansion since the arrival of pandemic. E-commerce players, especially grocery, online marketplaces and pharmaceuticals had experienced heightened demand in the past couple of years, and now with return of normalcy, e-commerce players are recalibrating their warehousing needs.
- FY 2023 saw occupier demand reach a historic high in the past six years in Kolkata. Inflationary trends in steel and cement caused by a supply crunch due to the pandemic and the more recent rate hikes left little choice for developers and operators but to increase rents selectively. This coincided with the strong demand seen during the period and maintained the market balance in favour of the developer, pushing up rents up by 5% YoY during FY 2023.

Major warehousing locations in Kolkata



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--------------------------------|---|
| Dankuni and Suburbs | Durgapur Expressway and Old Delhi Road (NH 19 [Old NH 2]) |
| National Highway 16 (Old NH 6) | Chamrail, Dhulagarh, Sankrail, Uluberia |
| Taratala-Maheshtala | Hide Road, Taratala Road, Garden Reach Road |
| Madhyamgram-Barasat | Madhyamgram, Barasat, Agarpara, Ganganagar |

Source: Knight Frank Research

Major infrastructure in Kolkata

| Name | Type |
|--|---------------------|
| Haldia Port* | Port |
| Kolkata Port | Port |
| Kulpi Port Project** | Port |
| Tajpur Port Project** | Port |
| Eastern Dedicated Freight Corridor | Freight Corridor |
| Amritsar-Delhi-Kolkata Industrial Corridor | Industrial Corridor |
| NH 19 | Road - NH |
| NH 16 | Road - NH |

Source: Knight Frank Research | Note: NH stands for National Highway

*Haldia Port is not in Kolkata but is a major dock complex that attracts a large volume of cargo movement from Kolkata due to its throughput handling capacity and infrastructure to accommodate large vessels

**Upcoming ports in the pipeline which will impact cargo movement from Kolkata

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--|--------------------------------|
| Arrjavn Industrial and Logistics Park | Dankuni and suburbs |
| Srijan Industrial Logistics Park | National Highway 16 (Old NH 6) |
| ESR Uluberia Industrial and Logistics Park | National Highway 16 (Old NH 6) |
| Diamond Industrial Park | Dankuni and suburbs |
| Sankrail Industrial Park (Old NH 6) | National Highway 16 (Old NH 6) |

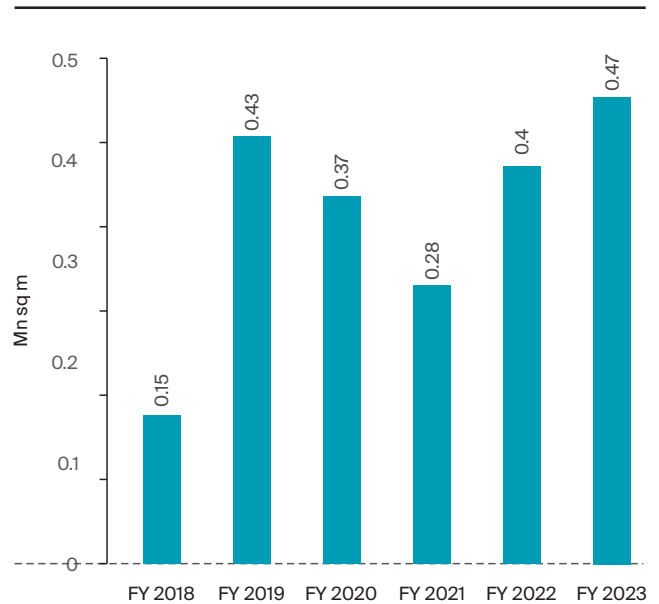
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|-------------|-------------------|--------------------------------|
| Reliance | Retail | National Highway 16 (Old NH 6) |
| DB Schenker | 3PL | Dankuni and suburbs |
| Exide | Manufacturing | National Highway 16 (Old NH 6) |
| Godrej | Manufacturing | National Highway 16 (Old NH 6) |
| Dabur | FMCG | National Highway 16 (Old NH 6) |

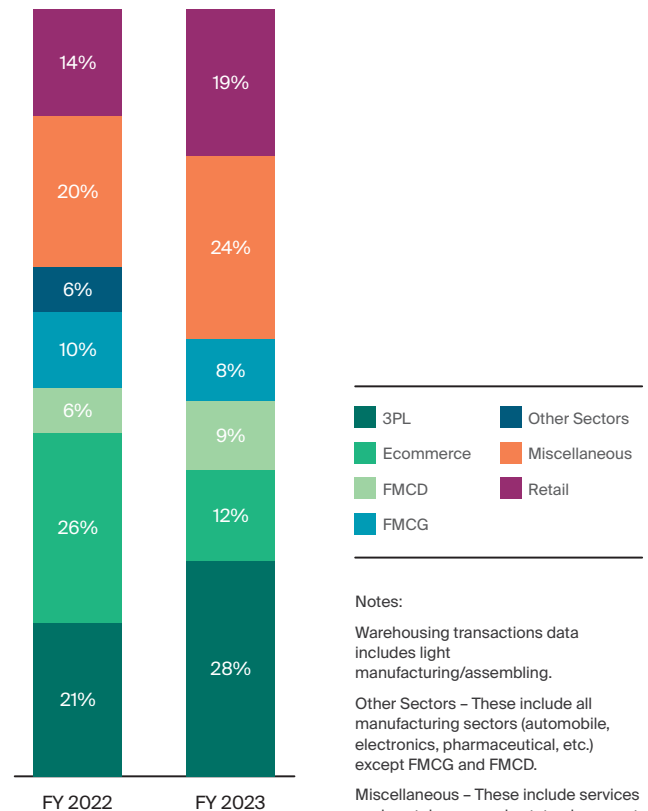
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Notes:

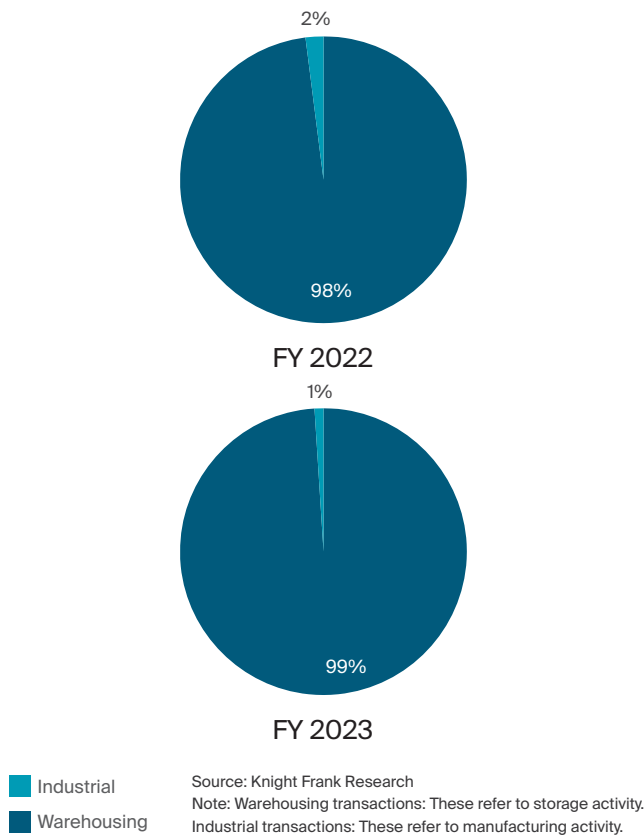
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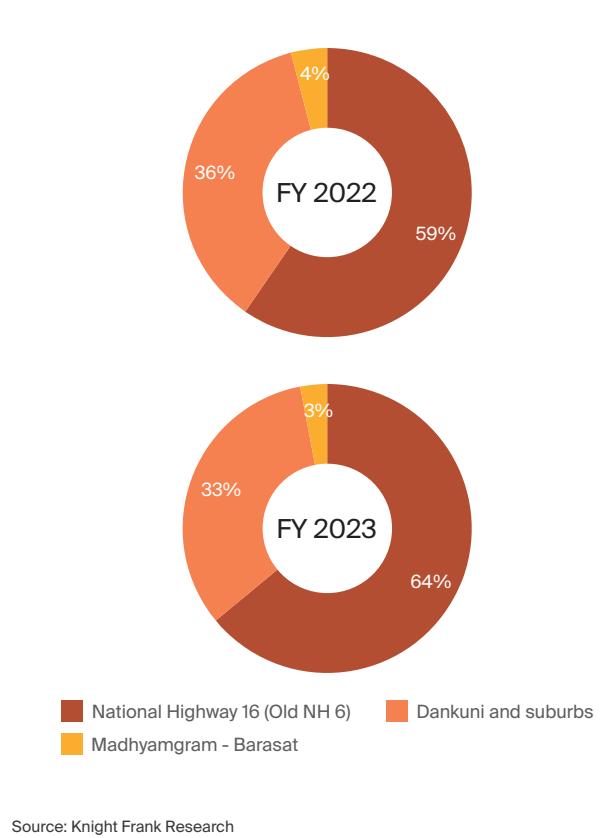
Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Source: Knight Frank Research

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|--------------------------------|---------------------------------------|---------------------------------|--|--|
| Dankuni and suburbs | Dankuni – before toll | 25-30 | 237-269 (22-25) | 205-226 (19-21) |
| | Dankuni – after toll | 15-20 | 205-248 (19-23) | 172-205 (16-19) |
| | Old Delhi Road – before proposed toll | 25-30 | 205-248 (19-23) | 194-215 (18-20) |
| | Old Delhi Road – after proposed toll | 15-20 | 194-215 (18-20) | 172-194 (16-18) |
| | | | | |
| National Highway 16 (Old NH 6) | Jangalpur | 40-50 | 226-269 (21-25) | 194-215 (18-20) |
| | Sankrail | 48-60 | 237-258 (22-24) | 194-215 (18-20) |
| | Uluberia | 18-24 | 194-226 (18-21) | 172-194 (16-18) |
| | Bagnan | 17-19 | 183-194 (17-18) | 161-183 (15-17) |
| | Amta-Ranihati Road | 18-24 | 183-205 (17-19) | 172-194 (16-18) |
| Taratala-Maheshtala | Hide Road | No large land parcels available | No Grade A | 215-258 (20-24) |
| | Budge Budge Trunk Road | No large land parcels available | No Grade A | 204-247 (19-23) |
| Madhyamgram-Barasat | Badu Road | No large land parcels available | 215-237 (20-22) | 183-205 (17-19) |
| | Airport Area | No large land parcels available | 269-301 (25-28) | 237-269 (22-25) |
| | Kalyani Express | 14-18 | 215-269 (20-25) | 172-205 (16-19) |

Source: Knight Frank Research

LUCKNOW

WAREHOUSING MARKET

- Uttar Pradesh (UP) is the most populous state in India and has a large demand base for consumer goods. Private warehousing in Uttar Pradesh mainly caters to this demand. Lucknow is one of the most important consumption markets in UP and is strategically located at the center of the state. By virtue of being the state capital, it has become an ideal location for development of warehouses with warehousing stock getting concentrated along the southern periphery of the city. The bulk of development has taken place up to Unnao along the Lucknow-Kanpur Road, since large land parcels are still available for greenfield development. Besides its resident population, the Lucknow warehousing market primarily serves the cities of Kanpur, Agra, Jhansi, Rae Bareli, Varanasi, Faisabad and Prayagraj.
- Broadly characterised by Grade B warehousing structures, Lucknow is a largely unorganised warehousing market with quality facilities having come into operation only in the last decade. A majority of the warehousing facilities are either positioned close to the airport or are on the Lucknow-Kanpur National Highway. Growing demand for warehousing facilities has kept rental levels buoyant in and around Lucknow through FY 2023. While rental levels for Grade B quality warehouses in locations of Transport Nagar, Bijnor and Nadarganj industrial area are in the range of INR 194-258/sq m/month (INR 18-24/sq ft/month), rents for Grade A type warehouses in the newer locations of Asha-Kheda, Kusheri and Sohramao along the Lucknow-Kanpur National Highway near Nawabganj, range between INR 226-258/sq m/month (INR 21-24/sq ft/month). For Grade B type warehouse facilities, the rents range between INR 194-226/sq m/month (INR 18-21/sq ft/month).
- As large corporates in the 3PL, e-commerce and pharmaceutical industries increase their footprint in the market, the need for development of more productive Grade A warehouses compliant with contemporary regulatory requirements, is also increasing. The pharmaceutical industry has a significant presence in Lucknow with over 450 companies operating in the south of the city, and this is a significant driver of the city's warehousing market. Largely concentrated in locations just east of the Lucknow-Kanpur Road, their

Transaction volumes grew 66% YoY in FY 2023 to 0.18 mn sq m (1.97 mn sq ft)

3PL occupiers accounted for 55% of the total transacted volume

Growing demand for warehousing facilities has kept rental levels buoyant

demand for Grade A warehouses has been growing. Their need to adhere to strict compliance requirements is also shared by the 3PL and e-commerce companies, whose presence has increased dramatically in recent years. Currently, a few developers such as Welspun, Adani, Nanak Logistics and Reciprocal constitute the Grade A warehousing landscape in the Lucknow warehousing market.

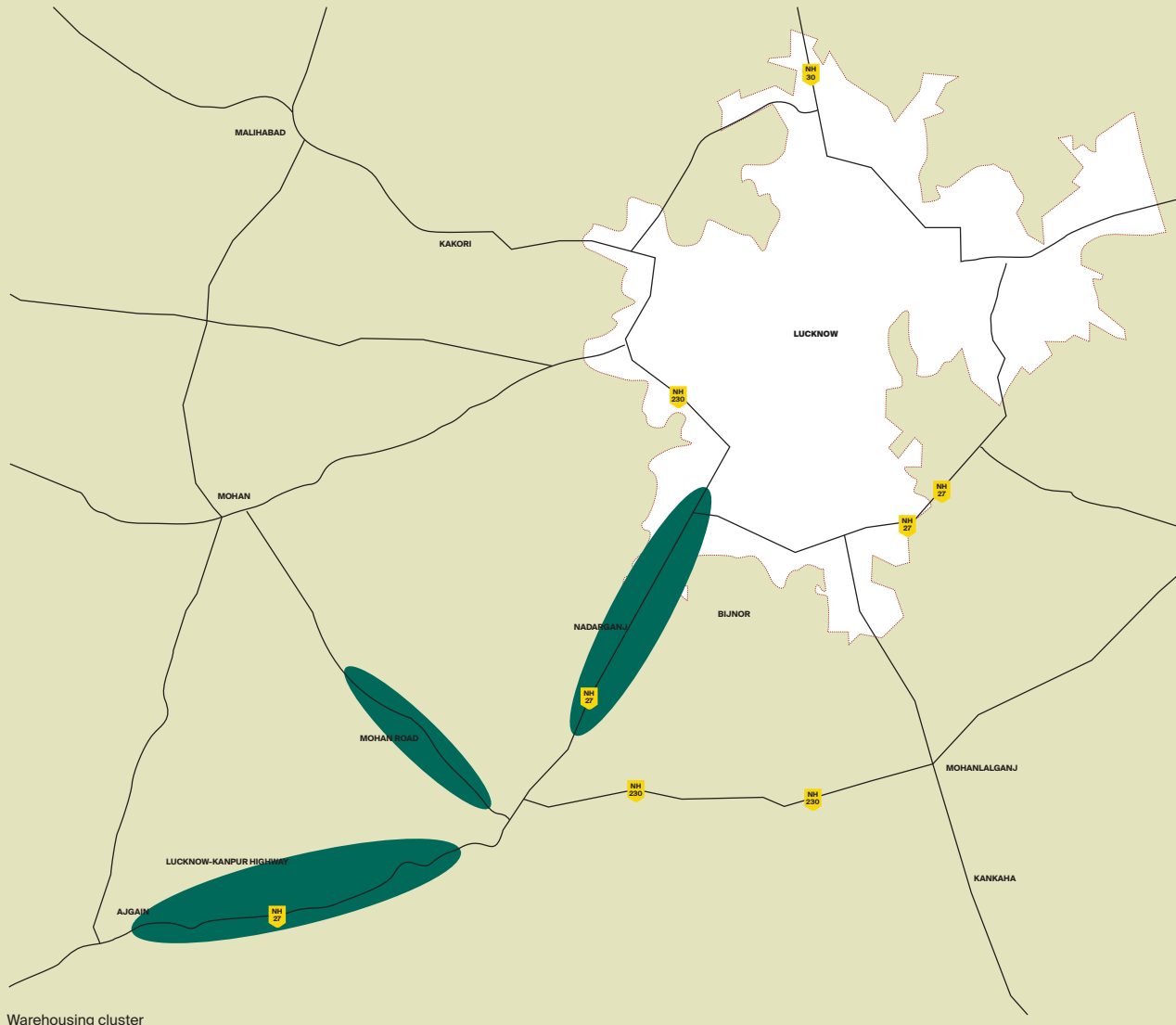
- Demand for warehousing space has grown consistently in Lucknow over the past five years and attained record levels in FY 2023. Robust occupier demand has pushed transaction volumes to 0.18 mn sq m (1.97 mn sq ft) which translates to a 66% growth in transacted space over the previous year. E-commerce players have been the mainstay of the Lucknow warehousing market since the turn of the decade, but it was the 3PL companies that led occupier demand in FY 2023. 3PL occupiers accounted for 55% of the total transacted volume during the year compared to a negligible share in the previous year. The share of e-commerce players dropped from a dominant 76% in FY 2022 to 21% in FY 2023 due to excess capacities having already been built during the pandemic.
- The increasing supply of superior quality warehouses and the need for increasing market penetration has continued to draw occupier demand in the Lucknow warehousing market. Retail players such as Reliance Retail and Lulu Mall accounted for 21% of the transacted space while the remaining space was taken up by manufacturing and media broadcasting/telecom companies.
- The Lucknow-Kanpur highway cluster continues to attract most of the development and occupier interest in the market and its standing is expected to sustain. Most locations in this warehousing cluster such as Kushehri, Sohramao and Mahnora are within 50 km from the city center. Factors such as the availability of reasonably priced, large land parcels, good road connectivity and the benefits of the industrial land use classification under Lucknow Industrial Development Authority (LIDA) will continue to support market traction in this cluster.
- With warehouse demand on an upward trajectory, development activity is also gaining

ground in the market. With an estimated development pipeline of approximately 0.14 mn sq m (1.5 mn sq ft) of Grade A built-to-suit space,

primarily on the Lucknow-Kanpur highway cluster, the Lucknow market seems reasonably well placed to satiate the increasing interest of

potential warehouse occupiers in the following year. The availability of viable land at the right cost, however, continues to remain a challenge.

Major warehousing locations in Lucknow



Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--------------------------------|--|
| Bijnor-Nadarganj cluster | Bijnor, Transport Nagar, Nadarganj, Mohanlalganj Road, Memaura |
| Lucknow-Kanpur Highway cluster | Asha-Kheda, Kusheri, Sohramao, Mahnora, Mohan Road |

Source: Knight Frank Research

Major infrastructure in Lucknow

| Name | Type |
|-----------------------------------|---------|
| Outer Ring Road (Phase I) | Road |
| Lucknow-Kanpur Highway (NH-27) | Road-NH |
| Lucknow-Delhi Highway (NH-24) | Road-NH |
| Lucknow-Prayagraj Highway (NH-30) | Road-NH |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|-------------------------|--------------------------|
| Escape Logistics | Lucknow-Kanpur Highway |
| Plus Nine One Logistics | Lucknow-Kanpur Highway |
| Bhandari Warehousing | Bijnor-Nadarganj cluster |

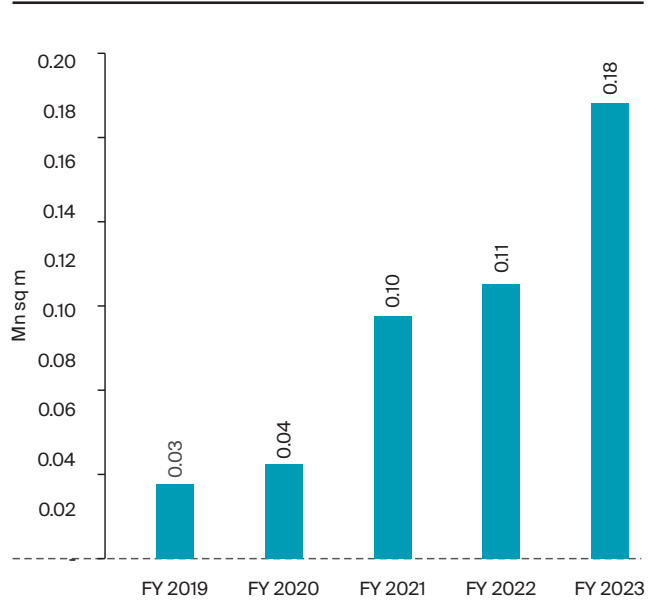
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------------|-------------------|------------------------|
| Reliance Digital | E-commerce | Lucknow-Kanpur Highway |
| Mahindra Logistics | 3PL | Lucknow-Kanpur Highway |
| DHL | 3PL | Lucknow-Kanpur Highway |
| Instakart | 3PL | Lucknow-Kanpur Highway |

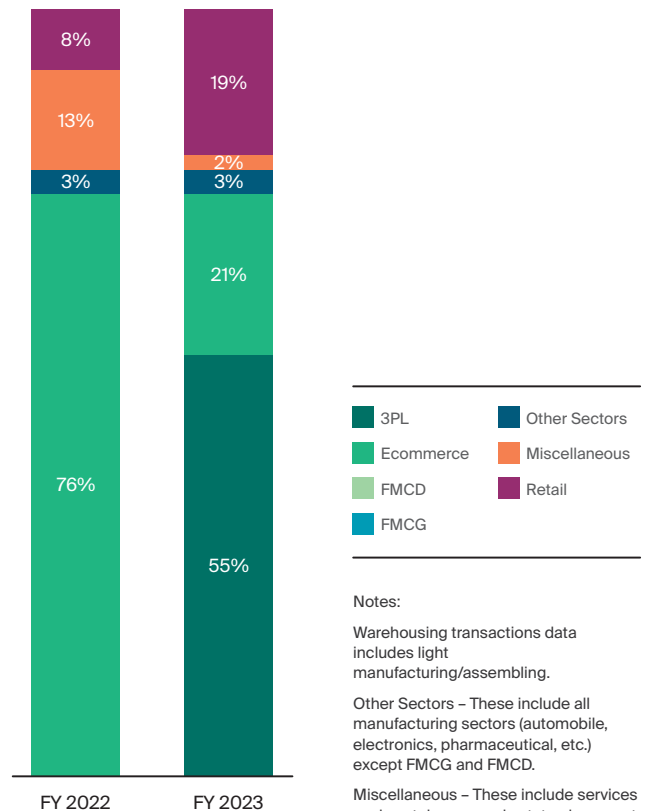
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

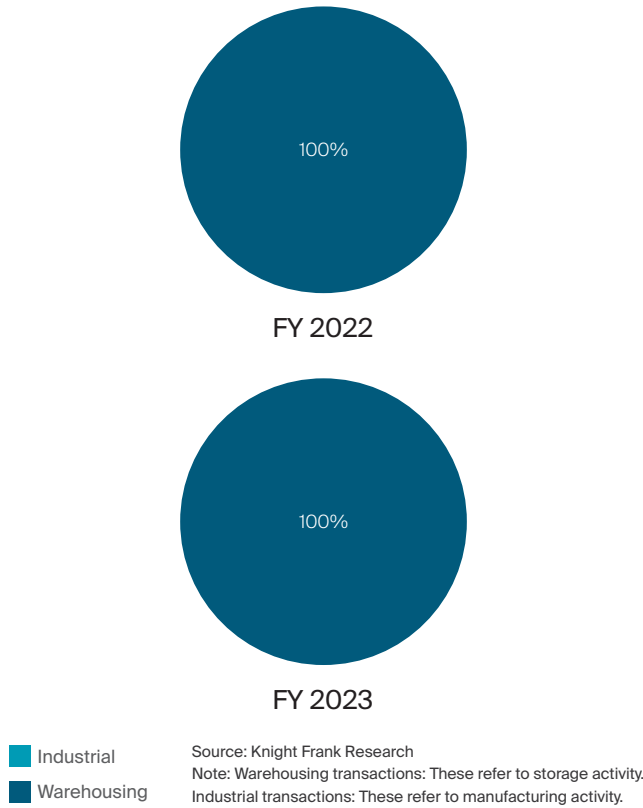
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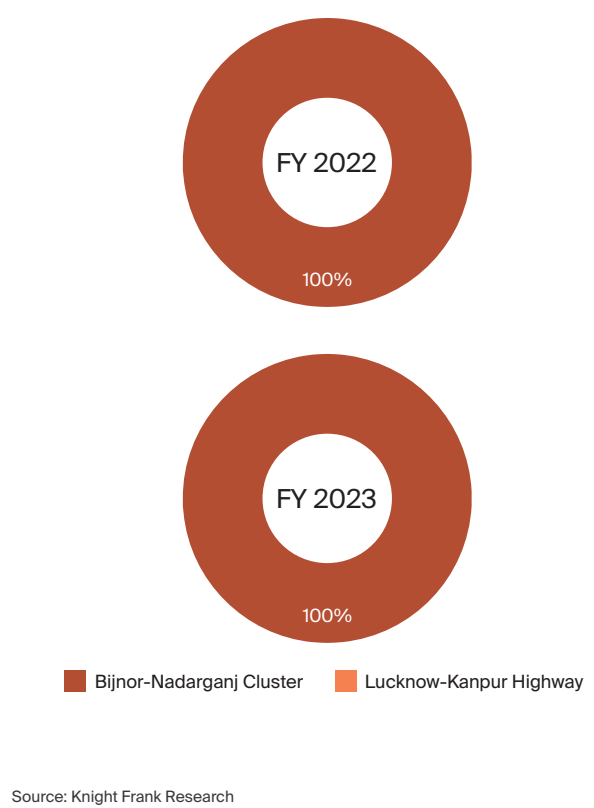
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Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|---------------------------|-------------------|-------------------------|--|--|
| Bijnor- Nadarganj cluster | Bijnor | 25-35 | Not available | 194-215 (18-20) |
| | Nadarganj | 30-50 | Not available | 194-258 (18-24) |
| | Mohanlalganj Road | 15-22 | Not available | 194-215 (18-20) |
| | Transport Nagar | 30-35 | Not available | 194-215 (18-20) |
| Lucknow-Kanpur Highway | Asha-Kheda | 13-16 | 226-258 (21-24) | 194-226 (18-21) |
| | Kushi | 13-16 | 226-258 (21-24) | 194-226 (18-21) |
| | Sohramao | 13-16 | 226-258 (21-24) | 194-226 (18-21) |
| | Mahnora | 13-16 | 226-258 (21-24) | 194-226 (18-21) |
| | Mohan Road | 14-18 | 226-258 (21-24) | 194-226 (18-21) |

Source: Knight Frank Research

LUDHIANA

WAREHOUSING MARKET

- Located in Punjab, Ludhiana is a prime industrial hub and a major consumption market in India. This prime industrial center is situated strategically on the Eastern Dedicated Freight Corridor. Once completed, this key infrastructure project will act as a catalyst for the development of organized industrial corridors and logistics parks along its alignment. This corridor is expected to reduce unit transportation cost for occupiers across sectors. The 447 km freight corridor will pass through the key districts of Sahnewal, Doraha, Ludhiana, Sirhind, Rajpura, Ambala, Yamunanagar, Saharanpur, Muzaffarnagar, Meerut and Hapur amongst others, all of which will reap the benefits of this alignment.
- Ludhiana has always been a small-scale industrial goods hub and remains largely unorganized till date. The city has been home to production of auto components, household appliances, hosiery, bicycle, hand tools and industrial equipment. This has made Ludhiana a key sourcing partner for companies in the FMCD, auto and manufacturing sectors. Just like other cities, Ludhiana's prime warehousing clusters are concentrated on two peripheral stretches in the city's southeast. The Chandigarh Road cluster has locations along the Ludhiana-Chandigarh State Highway (or parts of National Highway 5) and Focal Point all the way up to Kohara. The second cluster is the NH 44 cluster which includes erstwhile industrial clusters in Jalandhar Bypass, Transport Nagar Industrial Area, Sahnewal and Doraha.
- Ludhiana has excellent connectivity to other cities in Punjab as well as neighbouring states via the National Highway NH 5, NH 44 and State Highway 11 (SH 11). This ease of connectivity has made Ludhiana a key Tier II city for organised warehousing. Many developers and investors are actively looking at Ludhiana to evaluate opportunities for development of warehouses. The impending completion of the upcoming Ludhiana-Chandigarh National Highway in 2023 will improve connectivity between these cities and ease access to Mohali and Fatehgarh Sahib.
- Between FY 2020 to FY 2022, warehouse transactions recorded in Ludhiana have been on a continually upward trajectory. However, in FY 2023, 0.04 mn sq m (0.4 mn sq ft) of

Between FY 2020 and FY 2022, warehouse transactions recorded in Ludhiana have been on an upward trajectory. However, in FY 2023, 0.04 mn sq m (0.4 mn sq ft) of warehousing space was leased, representing a 39% YoY degrowth over FY 2022. This is largely attributed to a reduction in share of warehousing space leased by the e-commerce sector.

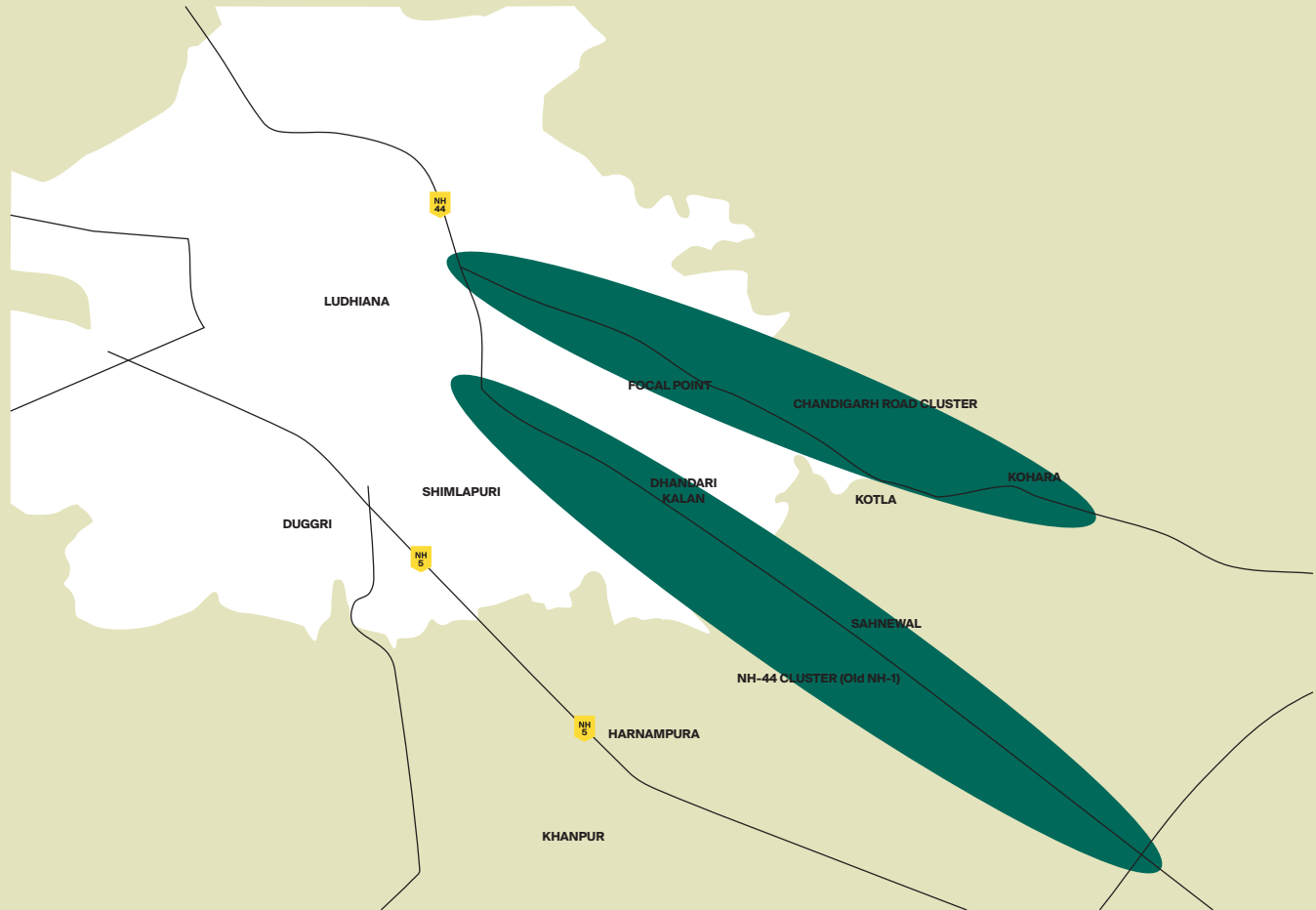
The total warehouse transaction volume was concentrated in the NH 44 cluster in FY 2023. This is primarily due to big box requirements in this cluster from 3PL and manufacturing sector occupiers.

In FY 2023, the manufacturing sector accounted for 43% of the total leasing volume followed by FMCG at 25%. The manufacturing sector's share expanded from 5% of the total leasing in FY 2022 to 43% in the current financial year as companies in diverse sectors expanded their warehousing footprint after a two year lull due to the pandemic.

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- The total warehouse transaction volume was concentrated in the NH 44 cluster in FY 2023. This is primarily due to big box requirements in this cluster from 3PL and manufacturing sector occupiers.
- In FY 2023, manufacturing sector accounted for 43% of the total leasing volume, followed by FMCG at 25%. The manufacturing sector's share expanded from 5% of the total leasing in FY 2022 to 43% in the current financial year as companies in diversified sectors expanded their warehousing footprint after a lull of two years due to the pandemic. The e-commerce sector's share shrunk from 70% in FY 2022 to 20% in FY 2023 as occupiers in this sector reassess warehousing needs after rampant expansion during the pandemic years.
- Despite healthy warehousing demand, rents have remained at par with the previous year. This is primarily because of landlords' willingness to offer better rental terms to attract tenants as large occupiers and marquee deals remain few and far between.
- Ludhiana is set for massive infrastructure upgrades as three mega logistics parks are expected to come up in participation from both private and state warehousing corporations. These parks will be located in the Kila Raipur village district and will cater to the logistics requirement of the entire industrial belt of Ludhiana and its nearby regions in Punjab such as Amritsar, Bhatinda, Jalandhar, Patiala and Hoshiarpur. These logistics parks will also provide a boost to modern warehousing in this region.

Major warehousing locations in Ludhiana



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--------------------------|---|
| Chandigarh Road Cluster | Locations along Ludhiana-Chandigarh State Highway (or parts of National Highway 5), Focal Point, Kohara |
| NH 44 Cluster (Old NH 1) | Jalandhar Bypass, Transport Nagar Industrial Area, Sahnewal, Doraha, Grand Trunk Road |

Source: Knight Frank Research

Major infrastructure in Ludhiana

| Name | Type |
|------------------------|-----------|
| NH 44 Ludhiana Stretch | Road - NH |
| NH 5/Ludhiana Stretch | Road - NH |
| SH 11 | Road - SH |
| Sahnewal Airport | Airport |

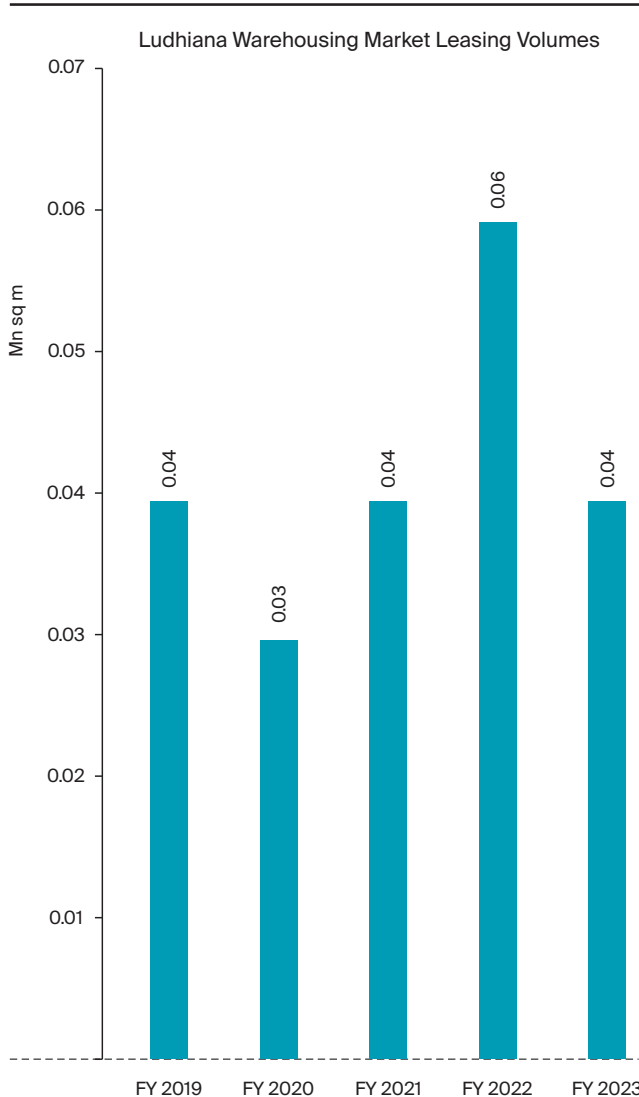
Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Occupier | Occupier industry | Warehouse cluster |
|----------------------------|-------------------|--------------------------|
| Hindustan Unilever Limited | FMCG | NH 44 Cluster (Old NH 1) |
| Flipkart | E-commerce | NH 44 Cluster (Old NH 1) |
| Gati | 3PL | NH 44 Cluster (Old NH 1) |

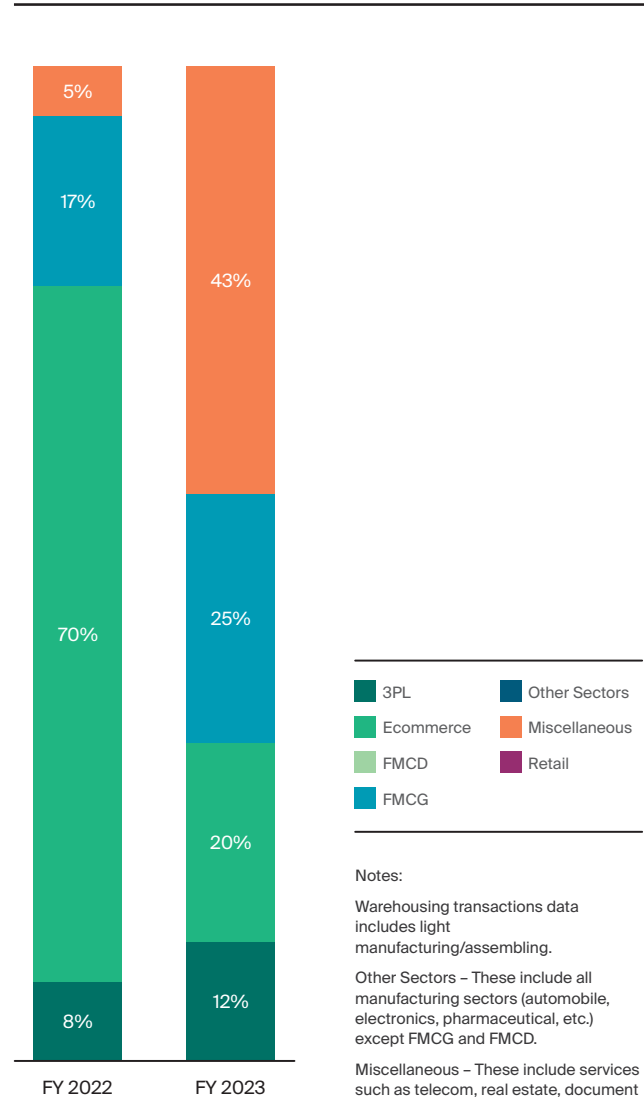
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

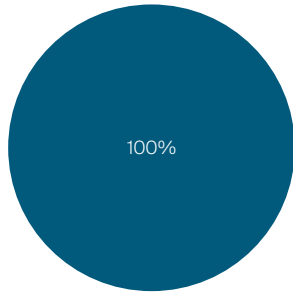
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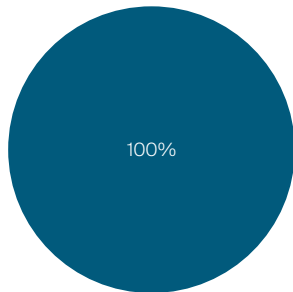
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Transaction share by end-use of space



FY 2022

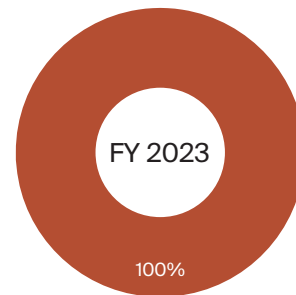
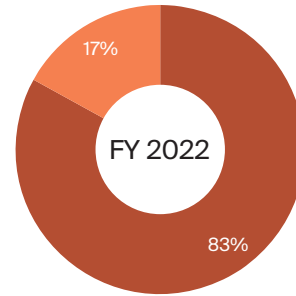


FY 2023

- Industrial
- Warehousing

Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



- NH-44 Cluster
- Chandigarh Road Cluster

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------------|-------------------------|--|--|
| Chandigarh Road Cluster | 13-15 | 161-194 (15-18) | 118-140 (11-13) |
| NH 44 Cluster | 15-20 | 161-194 (15-18) | 118-140 (11-13) |

Source: Knight Frank Research

MUMBAI

WAREHOUSING MARKET

- Mumbai, India's financial centre, is home to the country's largest urban population. The city serves as a crucial market for many large corporations like Amazon, Samsung and Flipkart. The Bhiwandi and Panvel clusters act as important warehousing clusters for the city as they assist in meeting the warehousing demand led by their proximity to the metropolis.
- The Mumbai warehouse market saw a leasing volume of 0.88 sq m (9.5 mn sq ft) in FY 2023, the highest in the last seven years, growing 10% YoY from 0.80 sq m (8.6 mn sq ft) in FY 2022. The Mumbai warehousing market continued to witness consistent growth for the second year in a row owing to improved occupier sentiment, steady demand for high-quality assets, and an increase in consumer demand. A huge consumer base and port-driven export-import (EXIM) freight flow underpin the Mumbai warehousing market.
- In FY 2023, the 3PL category accounted for 52% of the demand in Mumbai, driven by major transactions from big players such as Kerry Indev Logistics, DHL, and Rhenus Contract Logistics.
- The retail segment's share scaled to 16% in FY 2023 from 2% in FY 2022. This increase in retail space demand was largely driven by substantial space take-up by Reliance Project and Property Management Services Limited and Infinity Retail Limited totalling 0.13 mn sq m (1.4 mn sq ft). The manufacturing sector's share moderated at 14%.
- The warehouse clusters are strategically positioned in Mumbai's peripheral districts in the northwest and southwest corridors enabling connectivity to Nasik, Pune, Ahmedabad, and other key consumption centres via the NH 48, NH 3 Mumbai Nasik Highway, and the Mumbai Pune Highway.
- The Bhiwandi warehouse cluster is situated in the northern corridor and is well connected to the markets of Mumbai, Thane, and Navi Mumbai which are fuelling the consumer-led demand. However, since Bhiwandi is an older warehousing cluster, it has a smaller supply of Grade A storage space. Most of the upcoming stock, however, is expected to be Grade A as the cluster moves towards modernization.

Mumbai warehouse market saw a leasing volume of 0.88 sq m (9.5 mn sq ft) in FY 2023, the highest in the last seven years.

The Bhiwandi and Panvel clusters act as important warehousing clusters for the Mumbai as they assist in meeting the warehousing demand led by their proximity to the metropolis.

A huge consumer base and port-driven export-import (EXIM) freight flow underpin the Mumbai warehousing market.

Currently, Grade A properties constitute 20% of the total existing stock though it accounted for 45% of the overall transactions during this period. The cluster is plagued by traffic congestion caused by narrow roadways and insufficient infrastructure support. The availability of feasible land of sufficient size and the necessary title clearances have also been a key challenge in the Bhiwandi cluster and are expected to have an impact on the expansion of its warehousing market.

- With the city's physical boundaries constantly expanding and the government attempting to improve connectivity for commuters through projects such as the metro, Bhiwandi is also developing into an important affordable housing market. Residential development, a considerably more lucrative prospect for landowners and developers in this region, is creating substantial hurdles to the growth of warehousing in Bhiwandi.
- Upcoming warehousing in this micro market is predominantly located on the NH 3 Mumbai Nasik Highway which is in the outskirts of Bhiwandi and has good infrastructure support. Due to the presence of organised developers, good quality warehouses will support growth in this micro market.
- The Panvel warehousing cluster is located on the southern corridor near the JNPT port which is India's largest port, and close to the upcoming Panvel airport. This cluster mostly serves the EXIM market. The Panvel warehousing cluster is home to well-organized developers offering Grade A warehouses. Good infrastructure, clear property titles, and availability of land parcels of adequate size are contributing to its rising occupier share. The Panvel cluster is currently developing and will likely expand as more structured firms enter the market.
- An escalation in land value has been recorded in select micro markets across the Mumbai market with Lonad, Bhoirgaon and Dhohare from Bhiwandi cluster and JNPT, Taloja and Patalganga from Panvel cluster recording appreciation in land value. Land value in the Bhiwandi cluster varies from 18-28 mn/acre, while land value in the Panvel cluster with its good infrastructure support, ranges from 18-40 mn/acres.

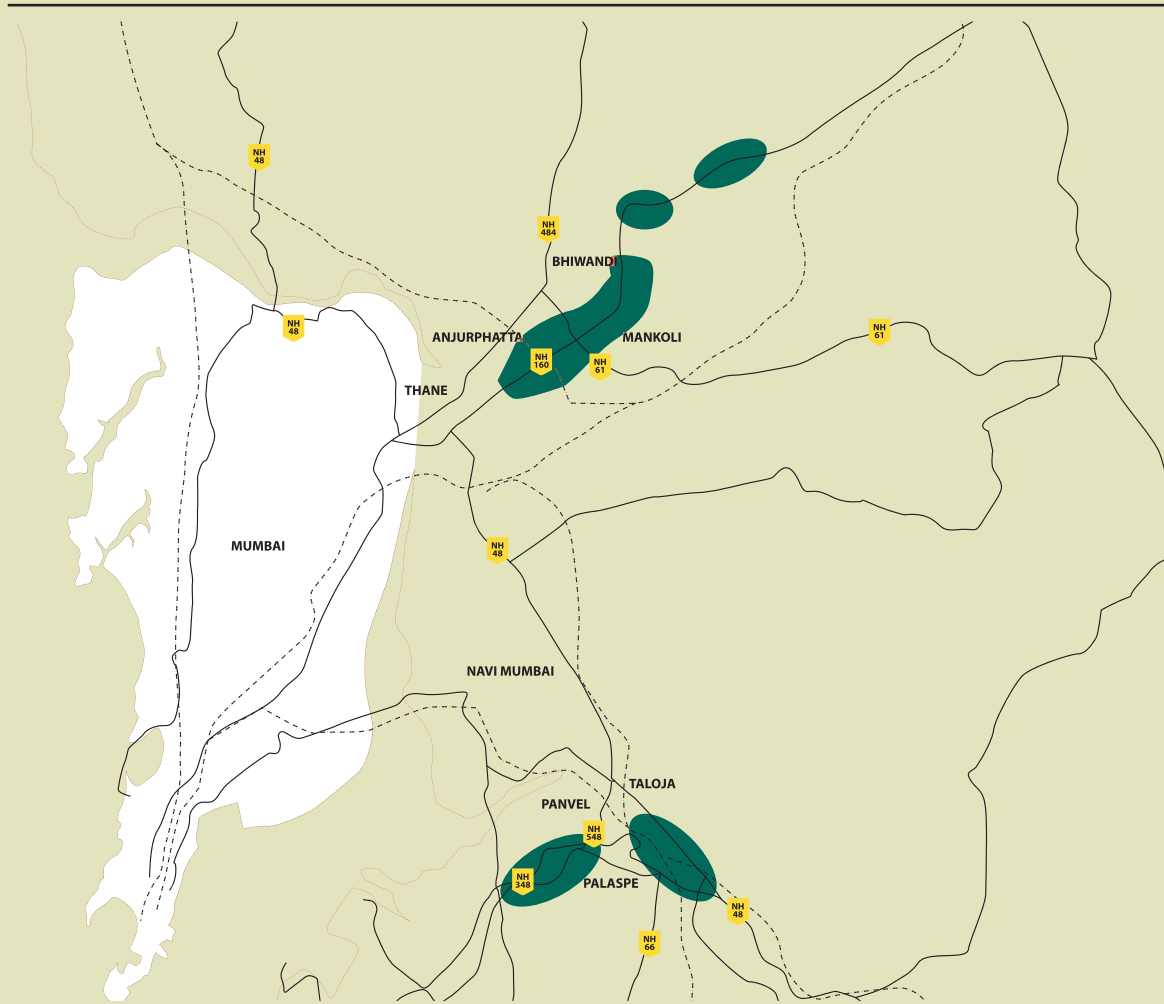
- Rentals for Grade A spaces in the Bhiwandi warehousing cluster range from INR 194-269/sq m/month (INR 16-25/sq ft/month), while rentals for Grade A spaces in the Panvel cluster

range from INR 258-323/sq m/month (INR 23-30/sq ft/month)

- Despite multiple challenges, Bhiwandi remains the favoured warehousing cluster for occupiers. However,

technological innovation and high-quality Grade A spaces offered by the Panvel cluster are projected to drive demand in this location.

Major warehousing locations in Mumbai



Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|---------------------|---|
| Bhiwandi | Mankoli, Kalher, Kashele, Dapode, Padgha, Vashere, Vadpe, Sape, Lonad, Bhavale, Sawad Naka, Dohole, Sonale, Anjurphatta |
| Panvel | Palaspe, Uran Road, Taloja, Patalganga |

Source: Knight Frank Research

Major infrastructure in Mumbai

| Name | Type |
|--|-------------------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Industrial corridor |
| Navi Mumbai Airport Influence Area (NAINA) | Airport and allied activities |
| Mumbai Trans-Harbour Link | Sea link |
| Virar-Alibaug Multi-modal Corridor | Multi-modal transport |
| Delhi-Mumbai Expressway | Express highway |
| Mumbai-Nagpur Expressway | Express highway |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--------------------------------------|------------------------------|
| ESR Bhiwandi 2 | Bhiwandi warehousing cluster |
| Renaissance Industrial Park, Vashere | Bhiwandi warehousing cluster |
| Global Industrial Park | Bhiwandi warehousing cluster |
| Antrisk Logistics Park | Bhiwandi warehousing cluster |
| K Square, Kurund | Bhiwandi warehousing cluster |
| CCI Logistics Park, Panvel | Panvel warehousing cluster |
| ESR, Palava | Panvel warehousing cluster |
| Lodha, Palava | Panvel warehousing cluster |

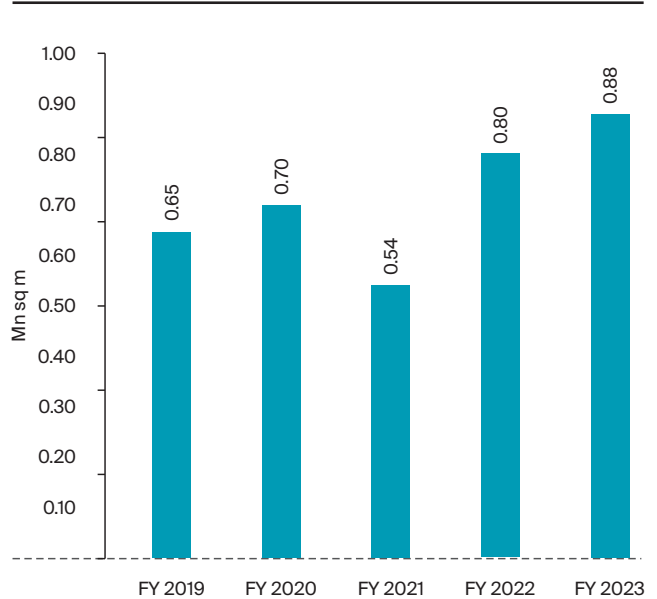
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|---|-------------------|------------------------------|
| Kerry Indev | 3PL | Bhiwandi warehousing cluster |
| Infiniti Retail Limited | Retail | Bhiwandi warehousing cluster |
| DHL Supply Chain 3PL India Pvt. Ltd. | | Bhiwandi warehousing cluster |
| Rhenus Contract Logistics India Pvt. Ltd. | 3PL | Bhiwandi warehousing cluster |
| Reliance Project And Property Management Services Limited | Retail | Bhiwandi warehousing cluster |

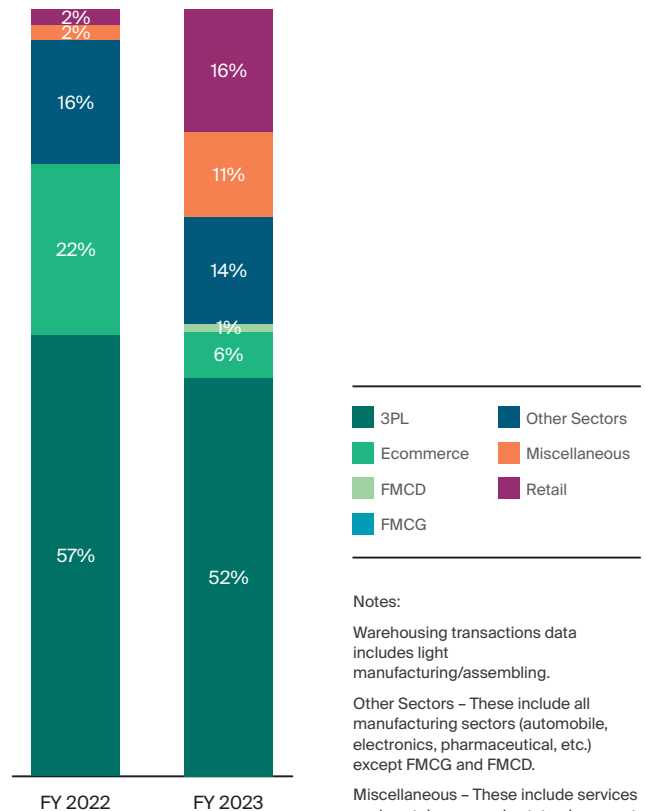
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

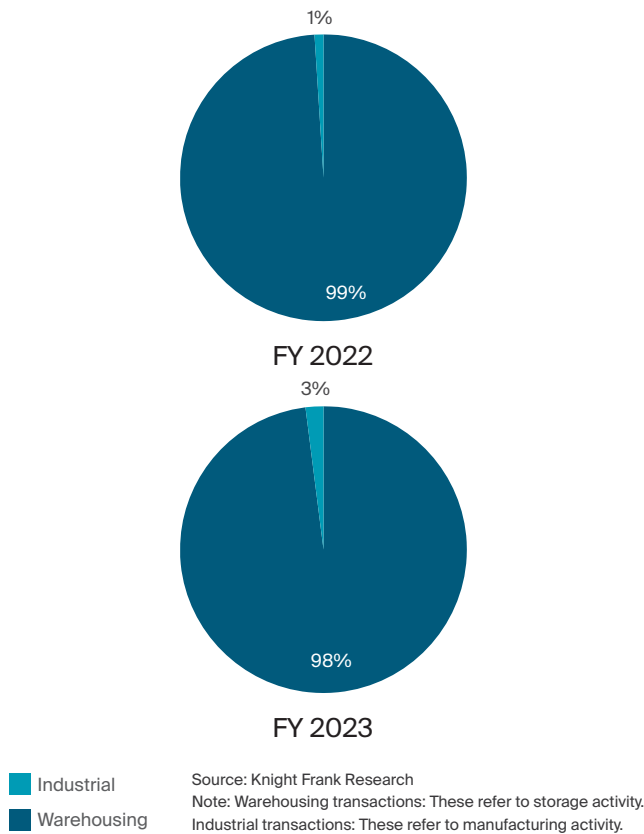
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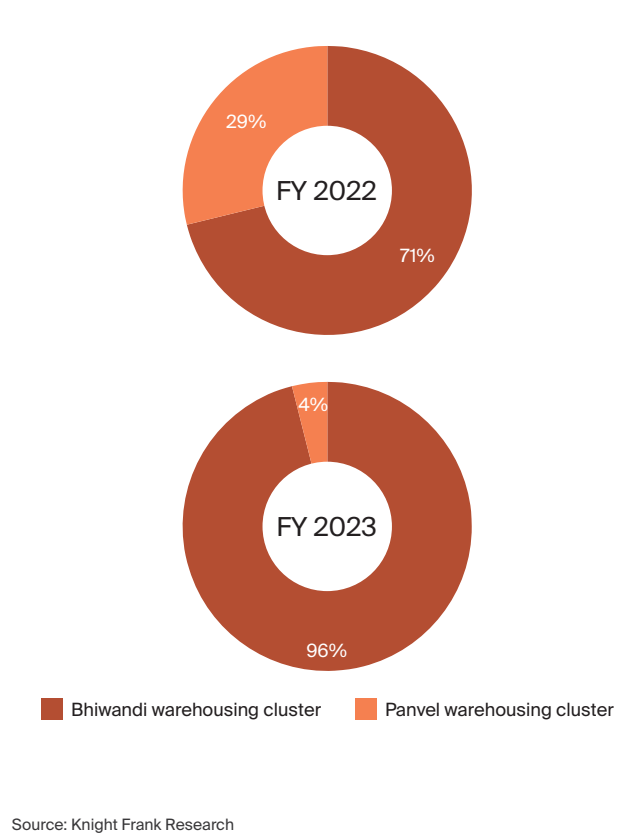
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Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|---------------------------|------------------|----------------------------------|--|--|
| Bhiwandi warehousing belt | Mankoli | Large land parcels not available | 226-258 (21-24) | 161-194 (16-18) |
| | Vadpe | 23-28 | 236-269 (21-24) | 194-215 (18-20) |
| | Padgha | 18-25 | 226-269 (21-24) | 183-194 (17-18) |
| | Vashare/Sape | 20-25 | 226-248 (19-23) | 172-194 (16-18) |
| | Lonad | 22-25 | 226-269 (21-24) | 172-205 (17-19) |
| | Sonale | 25-30 | 226-269 (23-25) | No Grade B supply |
| | Yewai | 25-30 | 236-269 (22-24) | No Grade B supply |
| | Bhoirgaon | 25-30 | 205-226 (21-24) | 172-194 (16-18) |
| | Dohale | 18-25 | 194-215 (16-19) | 172-194 (14-16) |
| | Koshimbi | 18-22 | 215-227 (16-19) | 172-194 (14-16) |
| Panvel warehousing belt | Palaspe-Goa Road | 25-30 | 269-323 (25-30) | 194-215 (18-20) |
| | JNPT | 23-40 | 258-291 (23-27) | 183-205 (20-23) |
| | Taloja | 25-40 | 280-323 (23-26) | 215-269 (20-23) |
| | Patalganga | 18-23 | No grade A supply | 151-194 (14-18) |

Source: Knight Frank Research

NAGPUR

WAREHOUSING MARKET

- Nagpur is an important city from the standpoint of India's logistics framework as it lies almost exactly at the centre of the country's vast geography. It is nearly equidistant from major consumption markets such as Mumbai, Delhi, Chennai and Kolkata. Nagpur has evolved as an industrial and agro commodities producing city.
- Nagpur is a well-connected city with all major highways passing through it such as NH 7 (connecting Varanasi to Kanyakumari) and NH 6 (connecting Mumbai-Sambalpur-Kolkata). The Multi-modal International Cargo Hub and Airport for Nagpur (Mihan) that is being developed is expected to handle heavy cargo coming from South-East Asia and the Middle East in the near future. Along with Mihan, the Samruddhi Mahamarg or the Nagpur-Mumbai Expressway which is close to completion, is also touted to be a gamechanger for the economy of Nagpur and its logistical importance. The expressway is expected to cut down travel time between Mumbai and Nagpur to 8 hrs from 15 hrs previously.
- The warehousing market of Nagpur city is largely fragmented. Nagpur has three major warehousing clusters in the city: the Nimji Kalameshwar cluster is located in the north-western region along the Kalameshwar Gondkhairi Road; the Ring Road cluster extending along Katol Bypass Road covering areas like Fetri, Lava and Hingna, is also located in the North western part of the city; and the Mihan MIDC. Mihan MIDC is the most recent and organised cluster located in the southern region of Nagpur in close proximity to the airport and metro route. The SEZ area in Mihan will be one of its kind with the largest multi-product SEZ in India spread across 1472 hectares. It will, however, still take a few years for Mihan to develop as envisaged.
- The demand in the Nagpur warehousing market has proved resilient through the pandemic and the momentum has been strong in FY 2023 as well. The annual leasing volumes have grown appreciably at 26% YoY during the year to 0.06 mn sq m (0.6 mn sq ft). 63% of this volume was transacted in Mihan while the balance was accounted for in the Nimji-Kalameshwar cluster.

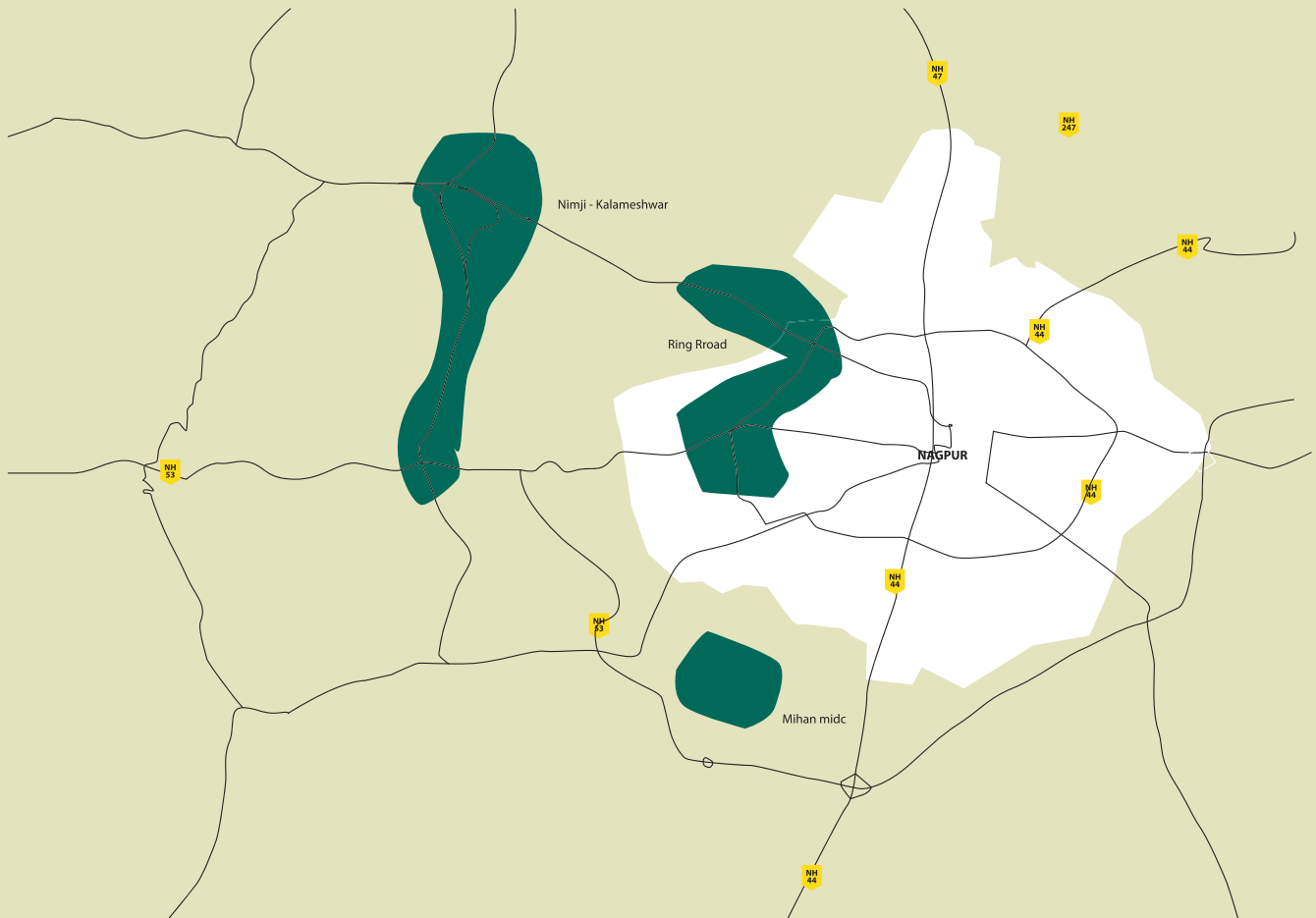
Annual leasing volumes have grown appreciably at 26% YoY during the year to 0.06 mn sq m (0.6 mn sq ft)

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Retail sector players such as Reliance Retail and Tata Croma constituted 48% of the area transacted during the year

- Leases inked by retail players such as Reliance Retail and Tata Croma constituted 48% of the area transacted during the year while 3PL companies which usually form the mainstay of this market accounted for 37%. The balance was taken up by manufacturing companies such as Royal Enfield.
- Mihan MIDC represents the most organised warehousing stock in Nagpur and commands higher land prices ranging from 18-24 mn/acre, whereas the Nimji Kalameshwar belt land rates range from 12-20 mn/acre and the Ring Road belt land rates range from 10-14 mn/acre.
- 63% of occupiers preferred to set up operations in the higher grade warehousing stock in Mihan despite the significant premium they command over the other clusters. Current lease rates for Grade A spaces in Mihan range from 194-237/sq m/month (18-22/sq ft/month) whereas Grade A spaces in Nimji-Kalameshwar belt range between 172-215/sq m/month (16-20/sq ft/month) and Grade A spaces in Ring Road belt trade between 129-183/sq m/month (12-17/sq ft/month).
- The massive infrastructure push under way to enhance connectivity from Nagpur to large consumption clusters such as Mumbai, Pune, Aurangabad and Nashik within the state and its central location in India's vast landmass will continue to drive the city's warehousing and logistics market.

Major warehousing locations in Nagpur



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|---------------------|--|
| Nimji-Kalameshwar | Nimji, Kalameshwar, Chinchbhuwan |
| Ring Road cluster | Fetri Road, Lava, Hingna MIDC , Khadgon Road |
| Mihan MIDC | Mihan MIDC |

Source: Knight Frank Research

Major infrastructure in Nagpur

| Name | Type |
|-------------------------|---------|
| Samruddhi Highway | Highway |
| Nagpur Broadgauge Metro | Metro |

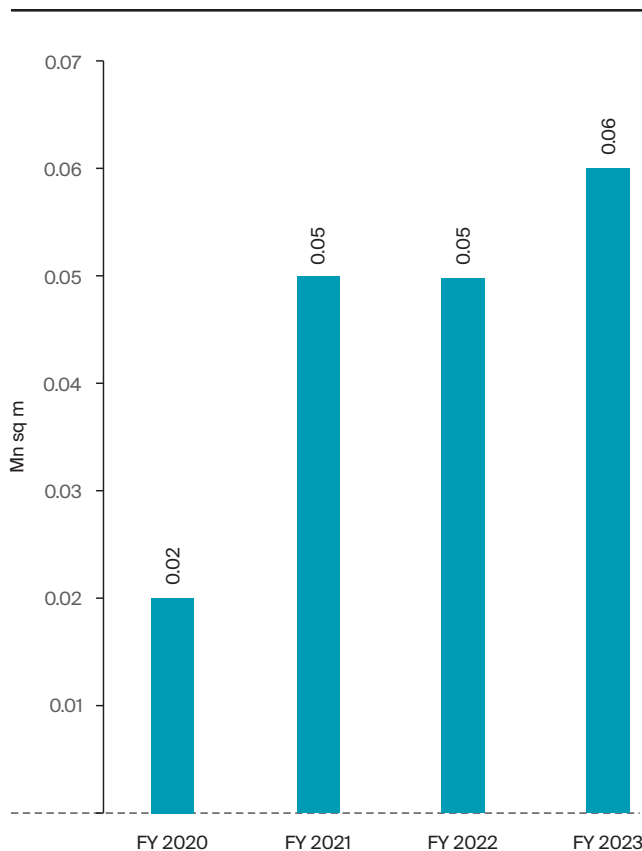
Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|-------------------------|-------------------|
| Xiso Logistics Park | Mihan MIDC |
| Orange Logistics Park | Mihan MIDC |
| Adani Logistics Park | Borkhedi Cluster |
| Inderson Logistics Park | Nimji Kalameshwar |
| RK Warehousing | Fetri Road |

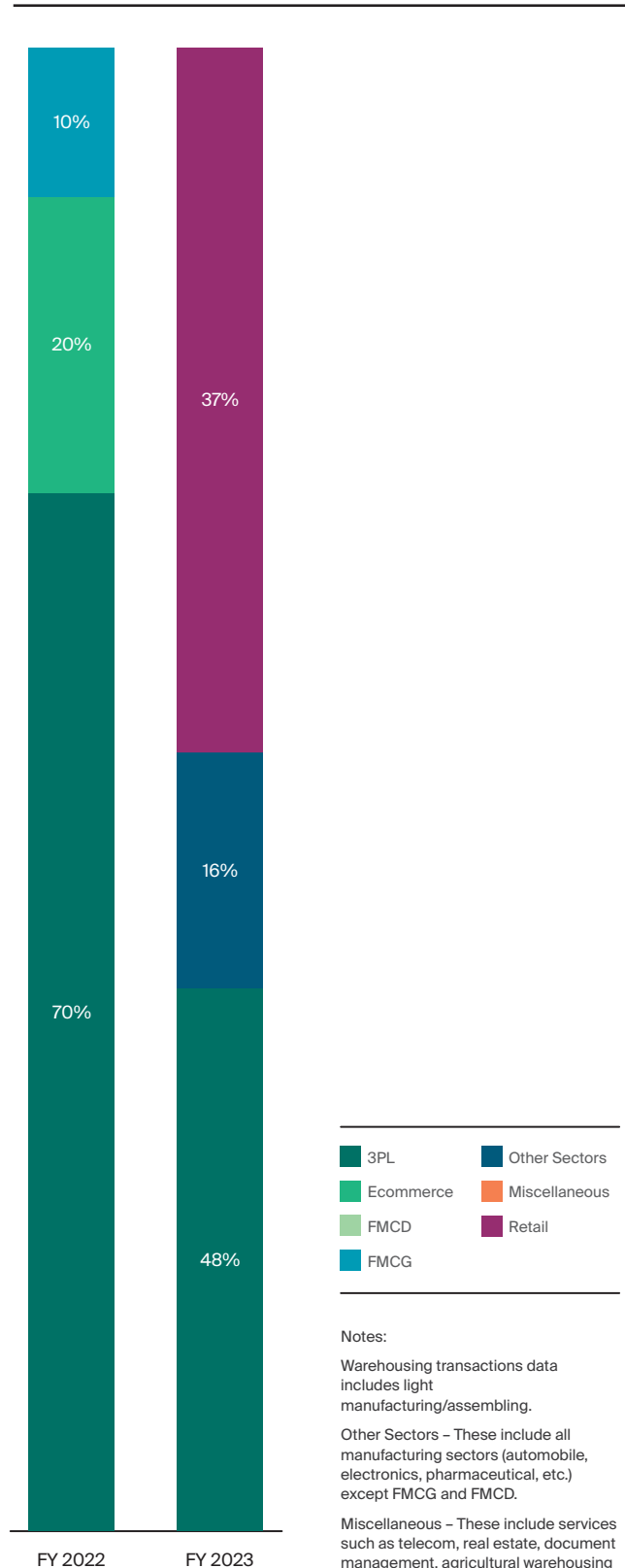
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

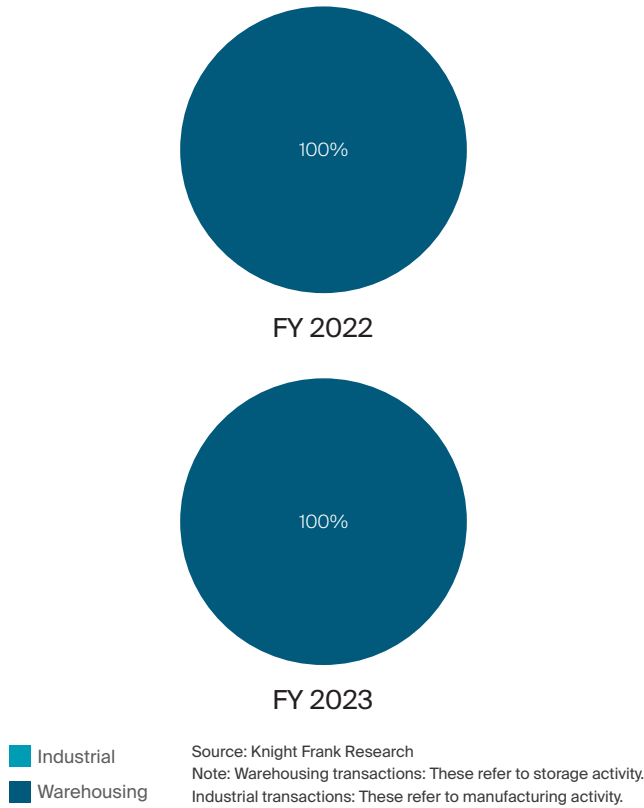
Notes:

Warehousing transactions data includes light manufacturing/assembly.

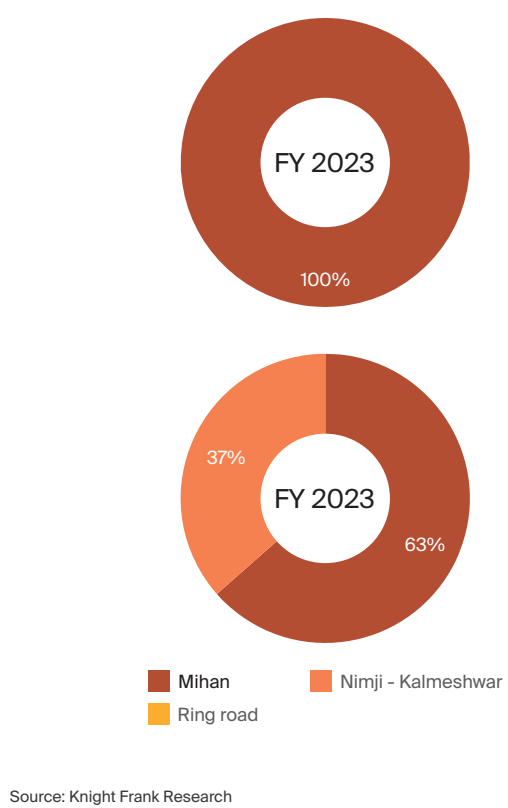
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------|---------------------------|-------------------------|--|--|
| Mihan | New Mihan MIDC | 18-24 | 194-237 (18-22) | 172-194 (16-18) |
| Nimji-Kalameshwar | Amravati Kalameshwar Road | 15-20 | 194-215 (18-20) | 172-194 (16-18) |
| | Syngenta | 15-20 | 172-194 (16-18) | 151-172 (14-16) |
| | Nagpur Toll Plaza | 15-20 | 172-194 (16-18) | 129-151 (12-14) |
| | Nimji | 15-20 | 172-194 (16-18) | 129-151 (12-14) |
| | Chinchbhuwan | 12-14 | 172-194 (16-18) | 151-172 (14-16) |
| Ring Road | Fetri Road | 12-14 | 129-151 (12-14) | 108-129 (10-12) |
| | Lava | 12-14 | 129-161 (12-15) | 86-108 (8-10) |
| | Hingna MIDC | 10-14 | 161-183 (15-17) | 129-140 (12-13) |
| | Khadgon Road | 10-14 | 151-161 (14-15) | 118-140 (11-13) |

Source: Knight Frank Research

NCR

WAREHOUSING MARKET

- The National Capital Region (NCR) is one of the biggest consumption centers in India. The national capital of Delhi is accessible from five national highways and shares its border with Haryana and Uttar Pradesh. The huge arterial road network that passes through Delhi and its peripheral areas have seen the emergence of various warehousing clusters along major industrial hubs in the past few decades. These warehousing clusters serve multiple consumption centers of North India such as Punjab, Haryana, Uttar Pradesh and Rajasthan through a well-connected road network. Ease of connectivity to different states, large-scale manufacturing units and industrialization have facilitated NCR to retain its position as one of the most preferred warehousing destinations in India.
- The GST implementation in 2017 paved the way for participation of many organised players in NCR's warehousing clusters to set up large industrial and warehousing parks. Many organized players that had existing warehousing footprint have continued to expand in this region through new facilities, or merger and acquisition with other players. A robust road network caters well for the transportation of goods, creating supply chain efficiencies for e-commerce, manufacturing, auto and auto ancillary, food processing and heavy engineering and retail sector occupiers. The increased consumer demand enhanced the demand for warehouses for the entire NH 48 belt, to cater to Delhi, Gurgaon, Noida, Greater Noida, Faridabad, Ghaziabad and other Tier II and Tier III consumption centers.
- In FY 2023, NCR's overall warehousing transaction volume was noted at 0.8 mn sq m (8.6 mn sq ft). Despite rapid expansion by e-commerce players in FY 2022, the transaction volume in FY 2023 slowed down by only 5% year-on-year (YoY) during this financial year. This is largely due to expansion of warehousing demand by 3PL and manufacturing sectors in FY 2023.
- Unlike the trends witnessed during the pandemic years – from FY 2020 and FY 2022, third party logistics (3PL) sector garnered the lion's share of 54% in FY 2023's warehousing leasing volumes. E-commerce sector, on the other hand, witnessed its share shrink to 8% in FY 2023 due to a slowdown in demand. Demand for new warehousing facilities by e-commerce sector shrunk drastically in FY 2023 in the aftermath of aggressive expansion since the

In FY 2023, NCR's overall warehousing transaction volume was noted at 0.8 mn sq m (8.6 mn sq ft).

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In line with FY 2022, the NH 48/Kundli Manesar Palwal Expressway (KMP) dominated the cluster-split pie of warehousing transactions in FY 2023 accounting for 75% of the total warehousing transaction volume.

arrival of pandemic. E-commerce players, especially grocery, online marketplaces and pharmaceuticals had experienced heightened demand in the past couple of years, and now with return of normalcy, e-commerce players are recalibrating their warehousing needs.

- Manufacturing sector, as an occupier group saw its share in transaction volume scale up from 8% in FY 2022 to 18% in FY 2023. Manufacturing sector is witnessing a comeback in demand as the share of this sector had moderated in FY 2021 and FY 2022 due to the pandemic induced curtailment in operations and restriction in mobility. As the pandemic subsided, companies in diversified sectors scaled up demand for setting up manufacturing units in NCR.
- In line with FY 2022, the NH 48/Kundli Manesar Palwal Expressway (KMP) dominated the cluster-split pie of warehousing transactions in FY 2023. This warehousing cluster accounted for 75% of the total warehousing transaction volume. New locations on this 135 km stretch, also known as Western Peripheral Expressway is the cynosure of both occupiers and developers, who have set up warehousing facilities in this strategically important transport artery in the past few years. With a dedicated corridor for movement of heavy vehicles around Delhi, this expressway goes round half its periphery and provides accessibility to big and small consumption markets in NCR. Along the KMP, several urban centres and industrial townships are planned as part of NCR's rapid industrialization, making it an investment hotspot for participation by institutional players.
- During FY 2023, Farrukhnagar, Luhari, Bilaspur-Pataudi Road on the NH-48/Kundli Manesar Palwal Expressway witnessed many big boxes requirements from 3PL players. New locations in this warehousing cluster such as Bhaproda and Hailey Mandi also attracted requirements from FMCD manufacturers and 3PL players. Barring NH 48/Kundli Manesar Palwal Expressway (KMP), 16% transactions were spread across the other warehousing clusters in NCR such as Sonipat, Ballabgarh, Habibpur and Greater Noida.
- Ghaziabad cluster's share in the total warehousing spaces leased increased from 1% in FY 2022 to 9% in FY 2023 largely on the back of warehousing requirements from 3PL, manufacturing and retail occupier groups for locations such as Dadri, Dasna and Sikandarabad.

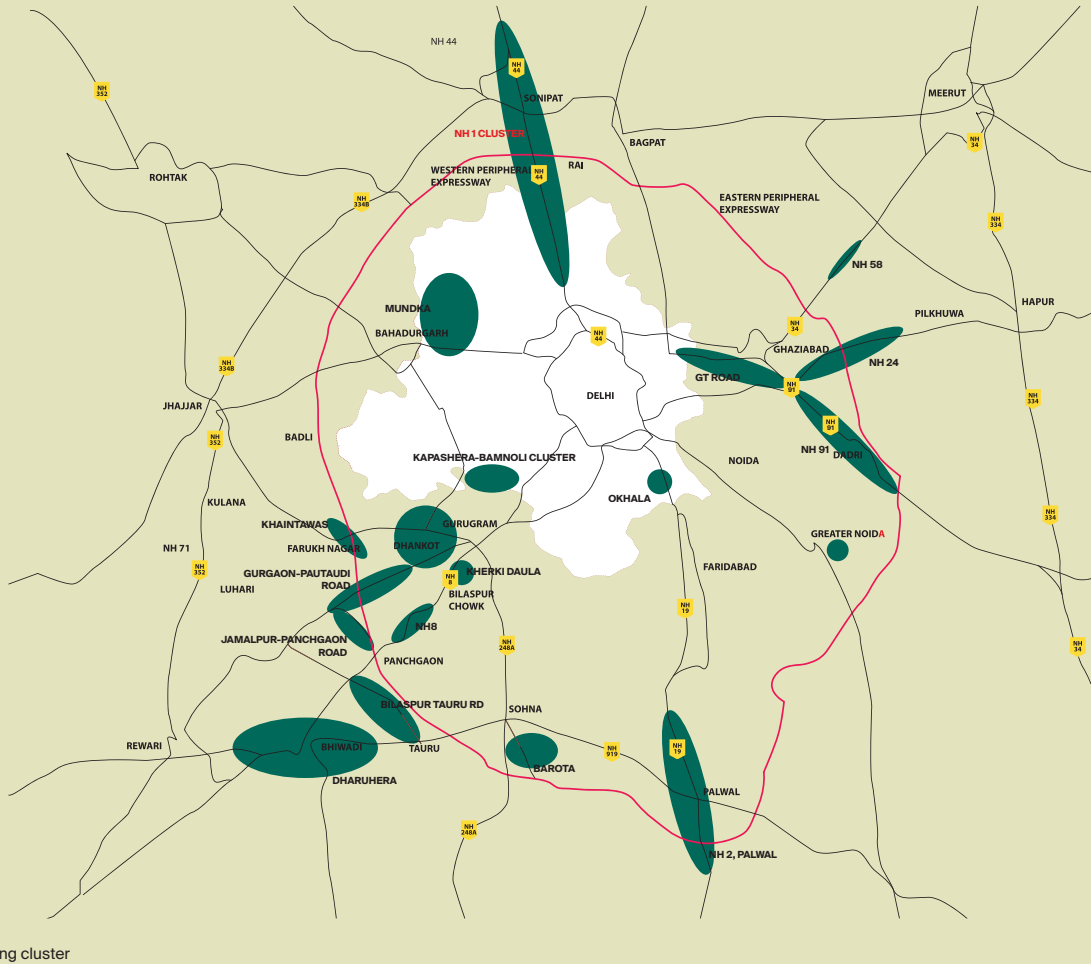
- With large scale infrastructure projects under construction, such as the Delhi-Mumbai Industrial Corridor (DMIC) connecting Sohna Road, Dedicated Freight Corridor (DFC) connecting Bawal and Haryana to Dadri, and increased land requirements from 3PL, e-commerce

and retail players, average rents increased by 7% YoY in FY 2023. Demand sustenance coupled with inflationary trends in steel and cement left developers with little choice but to increase rents.

- Whilst pent-up demand conversion by some occupiers led to a healthy

increase in warehousing leasing in FY 2022, the slight moderation in FY 2023 will only lead to comeback of volume in FY 2024 as market fundamentals and occupier intent to expand footprint in the NCR remained strong.

Major warehousing locations in NCR



Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|--|--|
| NH-48/Kundli Manesar Palwal Expressway (KMP) | Dharuhera, Pataudi-Luhari Road, Jamalpur-Panchgaon Road, Bilaspur-Tauru-Sohna Road, NH-71-Kulana, Badli, Farrukhnagar and other such areas accessible from NH-48 and Kundli Manesar Palwal Expressway. |
| Ghaziabad cluster | NH-91 (Dadri), NH 24 (Hapur), Dasna, Pilakhuwa and Meerut and other areas accessible from NH-24 and NH-34 |
| Others | Palwal, Sohna, Faridabad, Noida-Greater Noida, Alipur, Kundli, Sonipat, Murthal, Barota and Mundka |

Source: Knight Frank Research

Major infrastructure in NCR

| Name | Type |
|--|---------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Industrial Corridor |
| Eastern Peripheral Expressway or Kundli- Ghaziabad-Palwal (KGP) Expressway or National Expressway II | Road-NH |
| Western Peripheral Expressway or Kundli-Manesar-Palwal (KMP) Expressway | Road-NH |
| Dedicated Freight Corridors (DFC) | Rail |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|-------------------------|----------------------------|
| IndoSpace | NH-48/KMP (Luhari & Badli) |
| Horizon Industrial Park | NH-48/KMP |
| CCI Logistics/JKF Infra | NH-48/KMP |

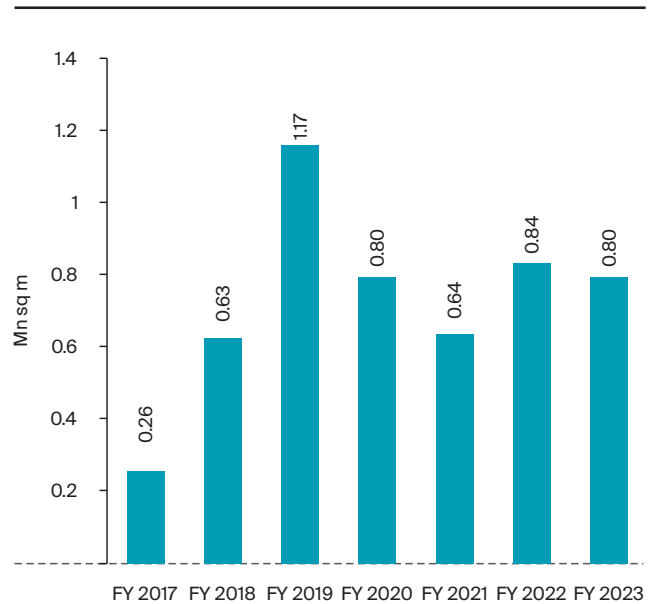
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------|-------------------|--|
| LF Logistics | 3PL | NH-48/Kundli Manesar Palwal Expressway (KMP) |
| DP World | 3PL | NH-48/Kundli Manesar Palwal Expressway (KMP) |
| DHL | 3PL | NH-48/Kundli Manesar Palwal Expressway (KMP) |
| Maersk | 3PL | NH-48/Kundli Manesar Palwal Expressway (KMP) |
| DB Schenker | 3PL | NH-48/Kundli Manesar Palwal Expressway (KMP) |

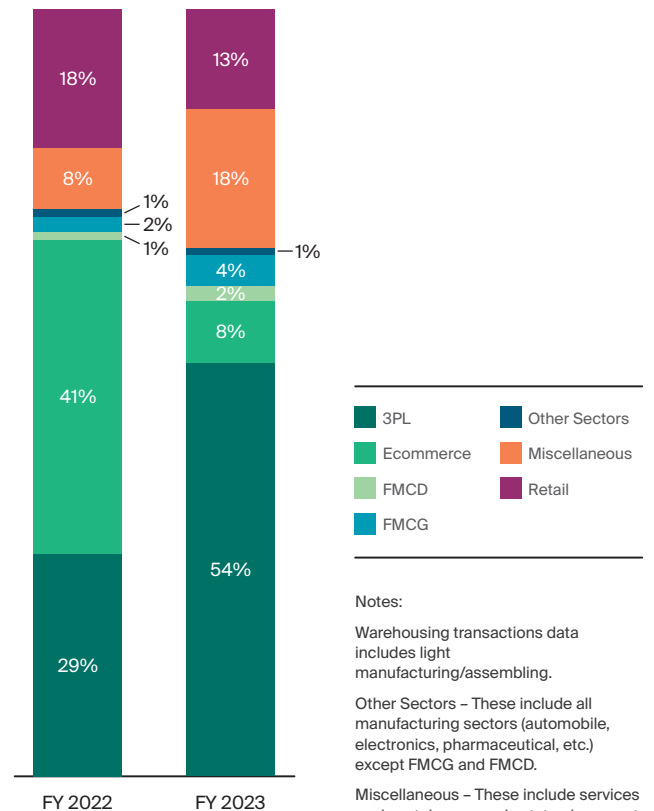
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

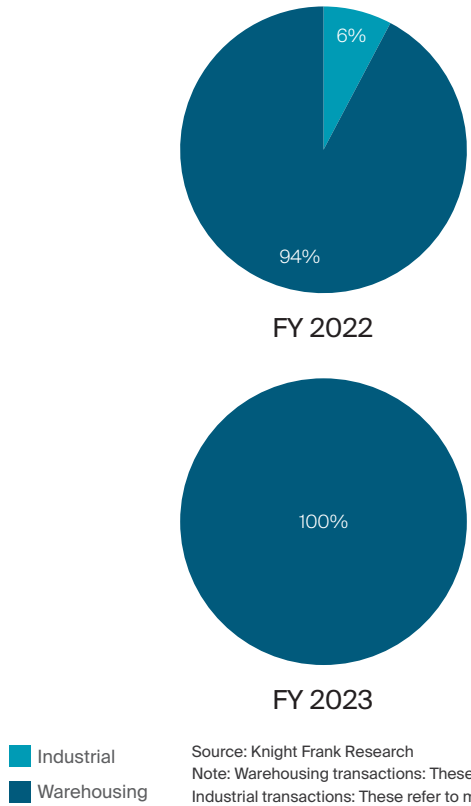
Notes:

Warehousing transactions data includes light manufacturing/assembly.

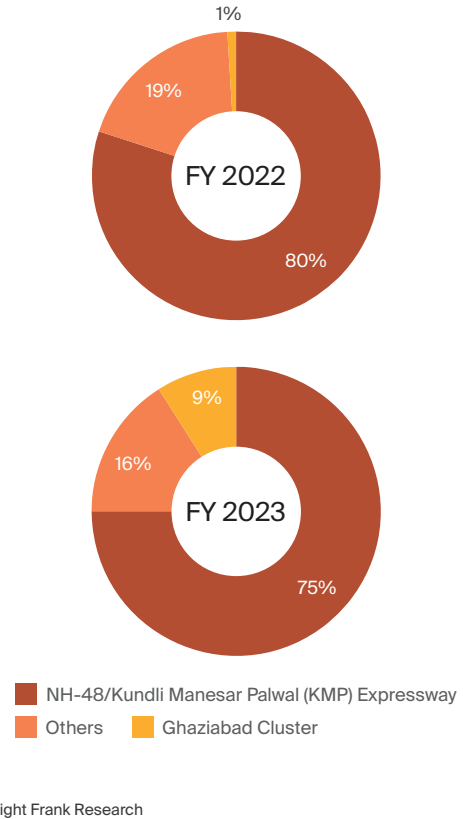
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Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------------------|--|---------------------------------|--|--|
| NH-48 Cluster/ KMP Cluster | NH-48 (Gurugram-Binola) | 20-30 | 237-269 (22-25) | 215-237 (20-22) |
| | Pataudi Road/Luhari | 17-25 | 226-248 (21-23) | 194-215 (18-20) |
| | Jamalpur-Panchgaon Road | 20-30 | 226-248 (21-23) | 194-215 (18-20) |
| | Bilaspur-Tauru-Sohna Road | 20-30 | 226-248 (21-23) | 194-215 (18-20) |
| | Dharuhera | 15-25 | 215-237 (20-22) | 183-205 (17-19) |
| | NH 71-Kulana | 15-20 | 172-237 (20-22) | 194-205 (18-19) |
| | Badli | 15-20 | 226-248 (21-23) | 194-215 (18-20) |
| | Farrukhnagar | 20-25 | 226-258 (21-24) | 194-215 (18-20) |
| Ghaziabad Cluster | NH-91 (Dadri) & NH-24 (Hapur) (Dasna-Pilikhua, Meerut) | 30-40 | 237-258 (22-24) | 205-226 (19-21) |
| Others | Greater Noida | 40-50 | 323-377 (30-35) | 269-312 (25-29) |
| | Faridabad | No large land parcels available | 215-258 (20-24) | 194-205 (18-19) |
| | Mundka | No large land parcels available | 205-237 (19-22) | 172-194 (16-18) |
| | Sonipat | 30-40 | 237-258 (22-24) | 205-226 (19-21) |

Source: Knight Frank Research

PUNE

WAREHOUSING MARKET

- Pune has evolved into a manufacturing hub concentrated on the automobile and its associated industries. The warehousing demand in Pune is driven by the industrial and manufacturing segments (other sectors), followed by consumption-led demand.
- In FY 2023, the Pune warehousing market saw leasing volumes of 0.69 mn sq m (7.4 mn sq ft), a marginal decline of 1.8% from 0.70 mn sq m (7.5 mn sq ft) in FY 2022. Overall, the demand remained robust as the manufacturing sector's share increased to 65%, bolstered by interest from major automakers such as Hyundai and Tata, as Pune's profile as an important manufacturing destination continues to grow.
- The northern region of Pune has two main warehouse belts: the Chakan-Talegaon belt and the Wagholi-Ranjangaon belt which are made up of the three major manufacturing clusters of Chakan, Talegaon, and Ranjangaon, developed by the Maharashtra Industrial Development Corporation (MIDC).
- Mumbai and Nasik are well connected to the Chakan-Talegaon belt. The Chakan MIDC has matured into a manufacturing and industrial centre and is referred to as the 'Automobile hub' in Maharashtra due to its significant automobile industry presence. By creating a supportive ancillary market that can flourish, Chakan has created a market that is favourable for the manufacturing industry to expand. Despite the higher rentals, new arrivals are eager to settle in this cluster. Most of the warehousing space that is now offered in Chakan serves the captive, internal demand of manufacturers from Chakan MIDC.
- Due to the high cost of land in Chakan, Talegaon has become the preferred market after Chakan. Connected to Mumbai and Pune via NH 48, Talegaon has swiftly grown into a mature manufacturing cluster and is a desirable location on par with Chakan. This micro market is now occupied by a number of significant businesses. As a result of the increase in demand for Talegaon, the cluster is being expanded with a new manufacturing cluster being proposed at MIDC Ambi.
- Despite high rents, the manufacturing and 3PL occupiers have recorded space take-up in the Chakan-Talegaon area in FY 2023 because it provides high-quality Grade A spaces within a

Pune has evolved into a manufacturing hub concentrated on the automobile and its associated industries.

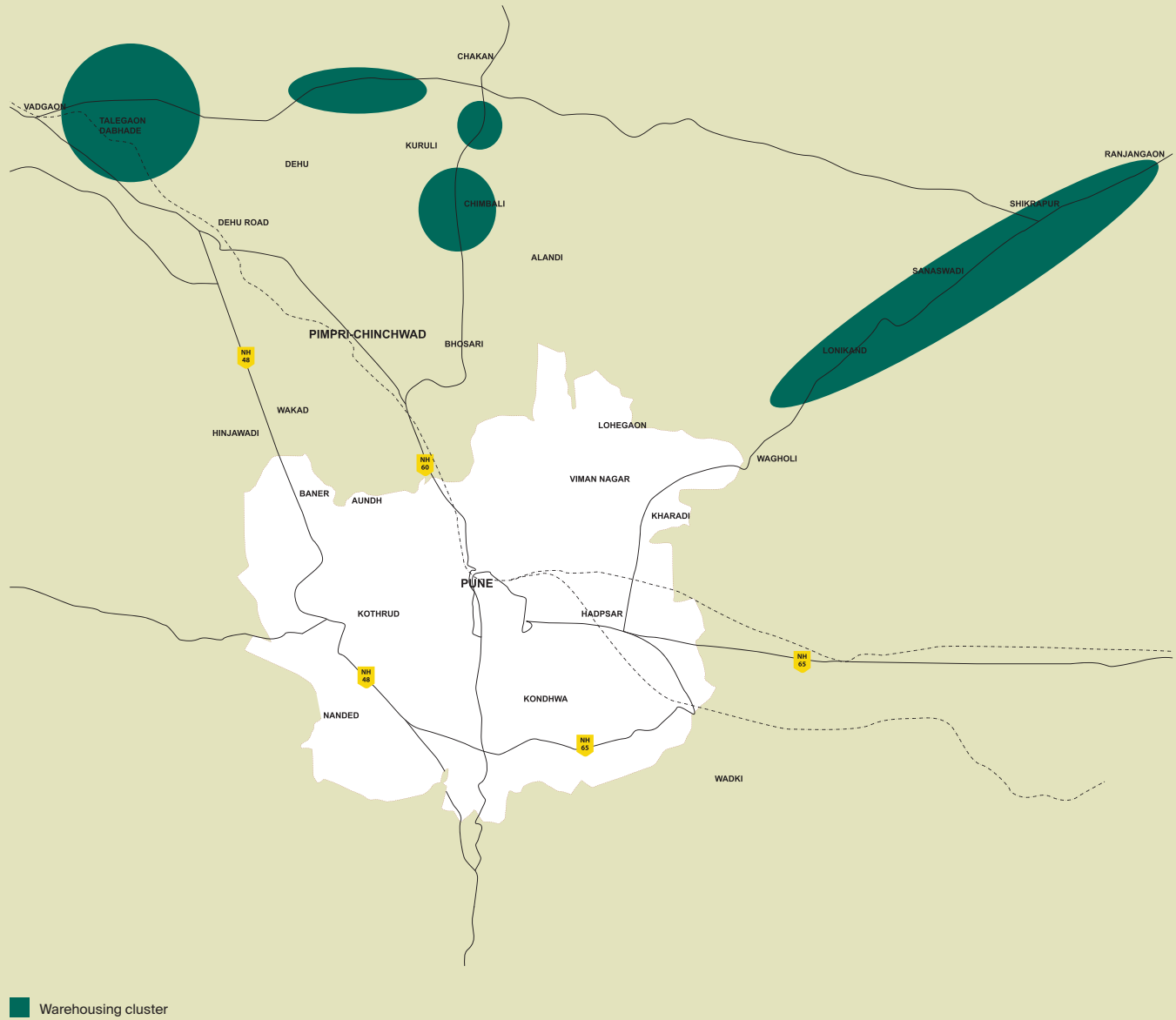
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Despite high rents, the manufacturing and 3PL occupiers have recorded space take-up in the Chakan-Talegaon area in FY 2023 because it provides high-quality Grade A spaces within a developed cluster with the necessary ancillary services.

developed cluster with the necessary ancillary services.

- North-east Pune is home to the Wagholi-Ranjangaon belt. Several sizable manufacturing firms are present in Ranjangaon MIDC. Of the three clusters, this one has the best infrastructure features such as internal roads with 2x2 or 1x1 lanes, and 3x3 lanes with separators. There is space for road widening in future without the need to buy additional land. To bring Ranjangaon on level with Chakan, a few large-scale manufacturers have expedited their development. Compared to Chakan and Talegaon, this cluster has lower land costs and rental rates, and mostly serves the needs of the manufacturing and industrial sectors.
- However, due to the longer travel time to the city, the share of consumption demand for warehousing space in this cluster is low. The Pune market has recorded a rent escalation of 4% YoY with an average rent of INR 269/sq m/month (25/sq ft/month) in FY 2023. Locations like Talegaon and Ranjangaon recorded upward rent movement in the Grade A spaces, while Chakan recorded rent escalations in both Grade A & B spaces owing to its high demand.
- Grade A rentals in the Chakan Talegaon belt range from INR 215-334/sq m/month (INR 20-31/sq ft/month) while rentals in the Wagholi-Ranjangaon belt range from INR 172-269/sq m/month (INR 16-25/sq ft/month).
- Going forward, the Pune market is expected to sustain its strong leasing momentum due to the city's considerable stature as a manufacturing hotspot and a substantial consumption hub.

Major warehousing locations in Pune



Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|-------------------------|---|
| Chakan-Talegaon belt | Chakan, Talegaon, Kuruli, Chimbali, Bhambholi |
| Wagholi-Ranjangaon belt | Wagholi, Lonikand, Chakan-Shikrapur Road, Sanaswadi, Ranjangaon |
| Others | Hinjewadi, Nagar Road, Pimpri-Chinchwad |

Source: Knight Frank Research

Major infrastructure in Pune

| Name | Type |
|-----------------------------|---------------------|
| Ring Road | Road infrastructure |
| MIDC Chakan upcoming phases | Industrial zones |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|---------------------------|-------------------|
| Greenbase Industrial Park | Talegaon |
| ESR Industrial Park | Chakan |
| KSH | Chakan |
| Indospace Industrial Park | Ranjangaon |
| Chordia Food Park | Shirwal |

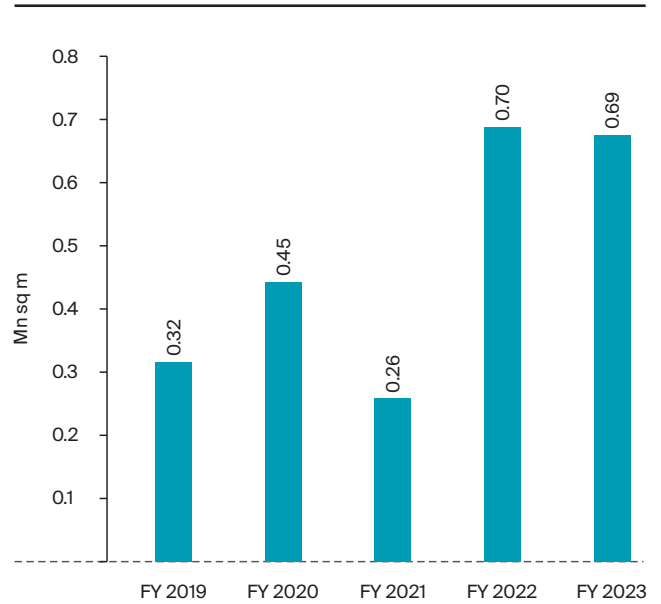
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--|-------------------|----------------------|
| New Century Sofa India | Manufacturing | Chakan-Talegaon belt |
| Tata Autocomp Gotion Green Energy Solutions | Manufacturing | Chakan-Khed City |
| Atomberg Technologies | FMCD | Chakan-Talegaon belt |
| DHL | 3PL | Chakan-Talegaon belt |
| Motherson Automotive Technologies & Engineering | Manufacturing | Chakan-Khed City |

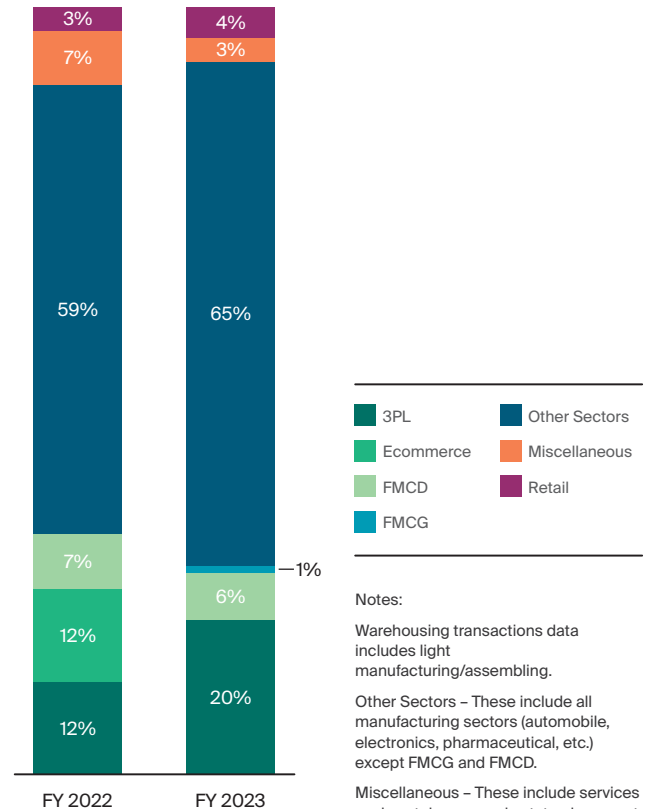
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

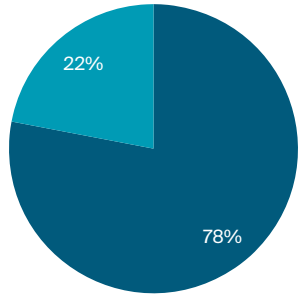
Notes:

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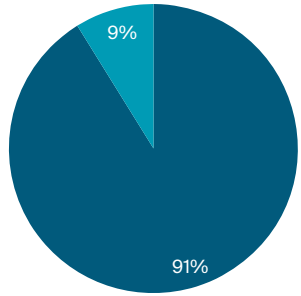
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Transaction share by end-use of space



FY 2022

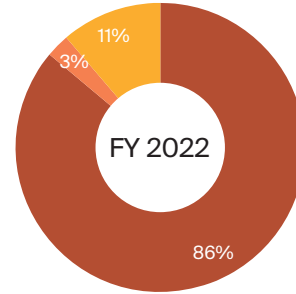


FY 2023

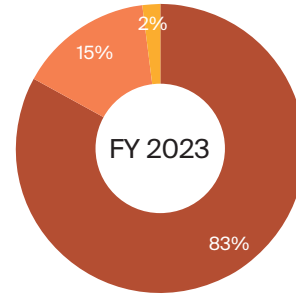
Industrial
Warehousing

Source: Knight Frank Research
Note: Warehousing transactions: These refer to storage activity.
Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



FY 2022



FY 2023

Chakan-Talegaon belt
Wagholi-Ranjangaon belt
Others

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------------|-----------------------|----------------------------------|--|--|
| Chakan-Talegaon belt | Chakan | 22-28 | 301-334 (28-31) | 226-269 (21-25) |
| | Talegaon | 20-25 | 215-258 (20-24) | 172-194 (16-18) |
| | Kuruli | Large land parcels not available | No Grade A supply | 151-172 (14-16) |
| | Chimbali | Large land parcels not available | No Grade A supply | 151-172 (14-16) |
| Wagholi-Ranjangaon belt | Wagholi | Large land parcels not available | 215-269(20-25) | 161-183 (15-17) |
| | Lonikand | 15-20 | 172-183 (16-17) | 140-161 (13-15) |
| | Chakan-Shikrapur Road | 12-16 | 194-215 (18-20) | 151-172 (14-16) |
| | Sanaswadi | 14-18 | No Grade A supply | 140-161 (13-15) |
| | Ranjangaon MIDC | 18-20 | 194-237 (18-22) | 151-183 (14-17) |
| Others | Shirwal | 13-16 | 172-194 (16-18) | 151-161 (14-15) |

Source: Knight Frank Research

SURAT

WAREHOUSING MARKET

- Surat is amongst the most prominent secondary warehousing markets that have been attracting the attention of occupiers over the past few years especially in the 3PL space. It is the 9th largest urban agglomeration and the 8th largest city by population in India. The city has developed on the back of a large diamond and textile industry. It has the presence of large industrial companies like AM/NS (ArcelorMittal Nippon Steel), Shell, L&T, NTPC, ONGC, GAIL, GSEG Power Plant, Gujarat State Petroleum Corporation, UltraTech Cement, and Hazira Manufacturing Division (HMD) of Reliance Industries in the Hazira Belt.
- Surat's economy is primarily driven by the diamond market. 80% of the world's diamonds are cut and polished in Surat making it a crucial location for diamond trade. The upcoming Diamond Bourse in Surat is slated to be one of the largest commercial buildings in the world, and India's second diamond trading hub.
- The warehousing clusters are primarily located in the eastern zone of Surat along the NH 8, which is a part of the golden quadrilateral, facilitating easy access to Vadodara and Ahmedabad. There are 3 major warehousing clusters: Surat-Kosamba-Palsana belt, Palsana-Sachin belt and Ichhapore-Hazira belt. Surat-Kosamba-Palsana belt and Palsana-Sachin belt lie in the east zone, while the Ichhapore -Hazira belt is in the western zone of Surat.
- The Kosamba-Palsana belt, located along the Mumbai-Ahmedabad National Highway NH 48, has a huge advantage due to inter-city connectivity, and is the oldest warehousing location in the city. However, with the growth and expansion of Surat city, the Surat Urban Development Authority (SUDA) has restricted any kind of new industrial development along the Kamrej and Kadodara corridor. The area falling within 1 km from the periphery of the existing NH 48 on both sides is designated for residential use, especially for affordable housing, and is the reason why the reservation has been made by SUDA. Developers who took approval prior to the notification may construct warehouses, but no new permits for warehousing projects will be granted. Hence, supply in the belt is only feasible beyond Palsana towards Vesma. In FY 2023, the Kosamba-Palsana belt accounted for 53% of the warehousing transactions.

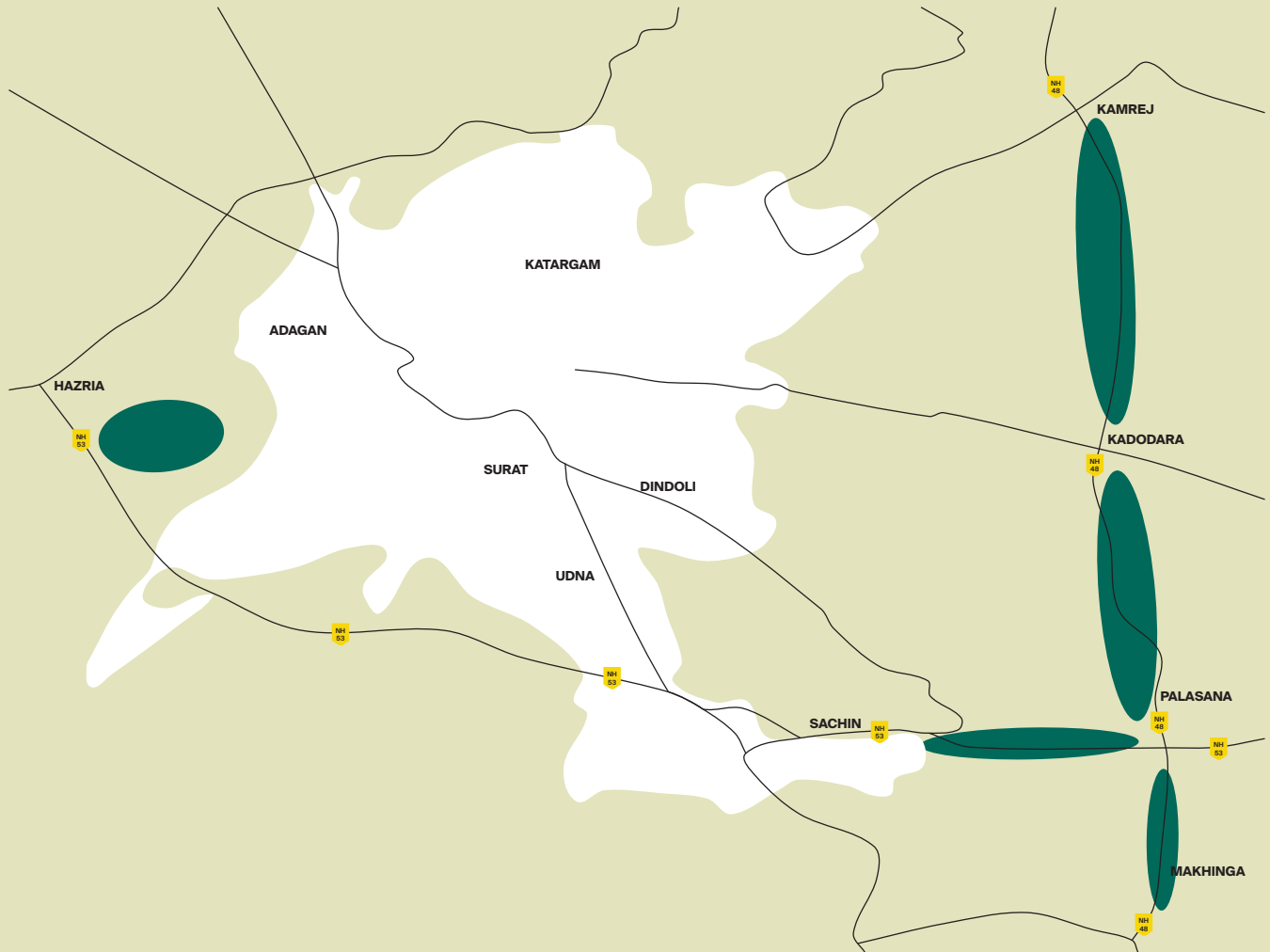
The warehousing transaction volume has grown at a CAGR of 39% in the last 5 years.

Absorption by 3PL players during FY 2023 has increased sharply by 144% YoY

Land parcels all over Surat have recorded a sharp price appreciation in FY 2023 due to the increase in demand for warehousing operations.

- Warehousing transactions in the Palsana-Sachin belt have recorded an increase during FY 2023 with its share increasing to 43% during FY 2023 as compared with 24% recorded during FY 2022. Due to its good connectivity, modern warehousing facilities are coming up in this belt, leading to relatively higher rentals for Grade A spaces. Further, due to its proximity to Surat city, this belt is preferred by 3PL players.
- The Ichhapore -Hazira belt in the west zone is predominantly an industrial location and has one of the major ports of India. Warehousing supply in this belt caters to the industrial demand, although FY 2023 recorded no major transaction in this belt.
- The warehousing transaction volume in Surat has grown at a CAGR of 39% in the last 5 years, from 0.02 mn sq m (0.2mn sq ft) in FY 2019 to 0.08 mn sq m (0.83 mn sq ft) in FY 2023. In annual terms, the volume has remained resilient, with the 3PL sector having the largest share in the occupier transaction pie. The overall absorption has fallen marginally by 3% during FY 2023.
- Absorption by 3PL players during FY 2023 has increased sharply by 144% YoY to constitute 71% of the overall transaction pie followed by retail players and e-commerce players constituting 18% and 6% respectively. Over the past 5 years, with most retail and e-commerce companies preferring to outsource their logistics and warehousing operations to 3PL players, warehousing demand by 3PL players has grown by 96% CAGR during FY 2019-23.
- Land parcels all over Surat have recorded a sharp price appreciation in FY 2023 due to the increase in demand for warehousing operations. Rentals for Grade A and Grade B spaces have seen a substantial uptick across all micro-markets.
- Warehousing demand is expected to grow further in Surat considering the immense potential the textile markets hold, coupled with the support offered by the Government of India with respect to the floating of textile PLIs and development of textile parks. The Kosamba-Palsana belt and Palsana-Sachin belt are expected to benefit the most due to their comparatively lower rentals, good infrastructure support and locational advantages.

Major warehousing locations in Surat



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|------------------------|--|
| Kosamba-Palsana belt | Kosamba, Kamrej, Vav, Kadodara, Vareli, Palsana, Makhingha |
| Palsana-Sachin belt | Palsana, Lingad, Sachin, Sachin GIDC, Unn |
| Ichhapore -Hazira belt | Ichhapore, Hazira |

Source: Knight Frank Research

Major infrastructure in Surat

| Name | Type |
|---|---------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Industrial corridor |
| Delhi-Mumbai Expressway | Express highway |
| Hazira Port | Port |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|-----------------------------------|--------------------------|
| Footprint Warehousing | Kosamba-Kadodara-Palsana |
| Mascot Industrial Park | Kosamba-Kadodara-Palsana |
| Ashwika Warehousing | Kosamba-Kadodara-Palsana |
| Prime Industrial & Logistics Park | Kosamba-Kadodara-Palsana |
| A & J Developers | Palsana-Sachin |

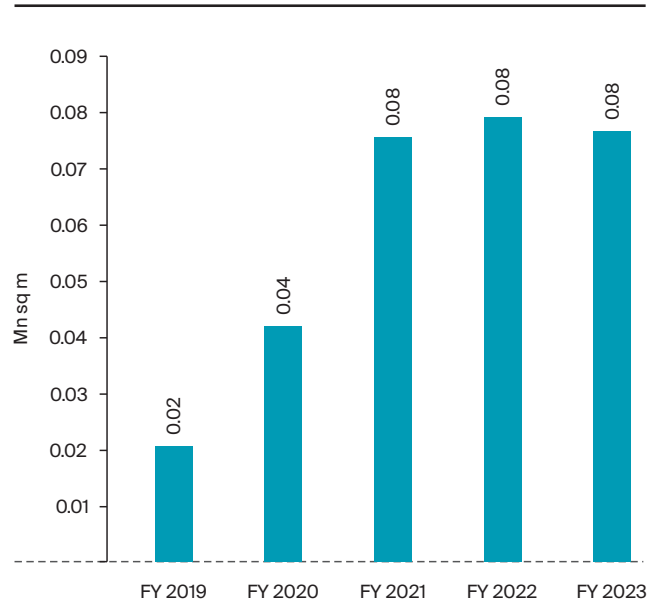
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|-----------------|-------------------|----------------------|
| Shadowfax | 3PL | Kosamba-Palsana belt |
| Reliance Retail | Retail | Kosamba-Palsana belt |
| E-Com Express | 3PL | Palsana-Sachin belt |
| DTDC | 3PL | Kosamba-Palsana belt |
| Xpressbees | 3PL | Palsana-Sachin belt |

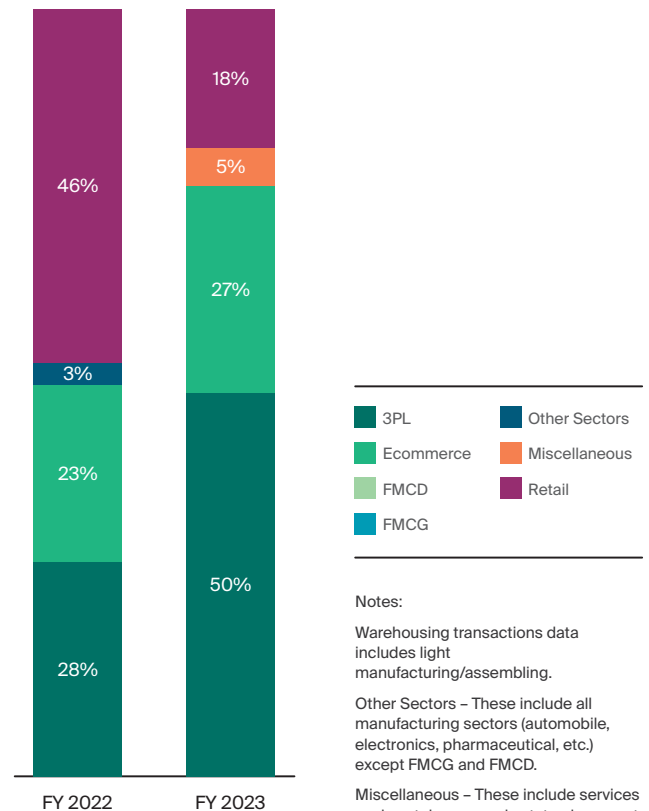
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

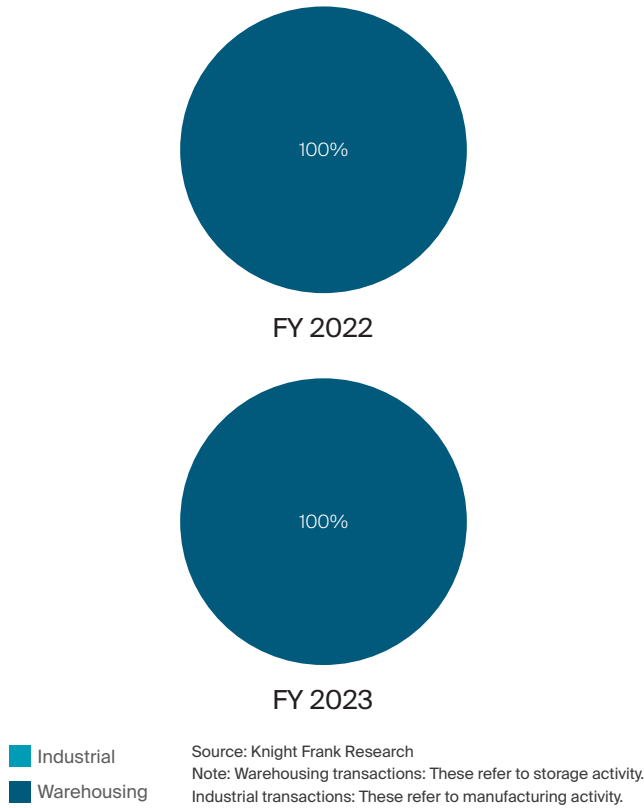
Notes:

Warehousing transactions data includes light manufacturing/assembly.

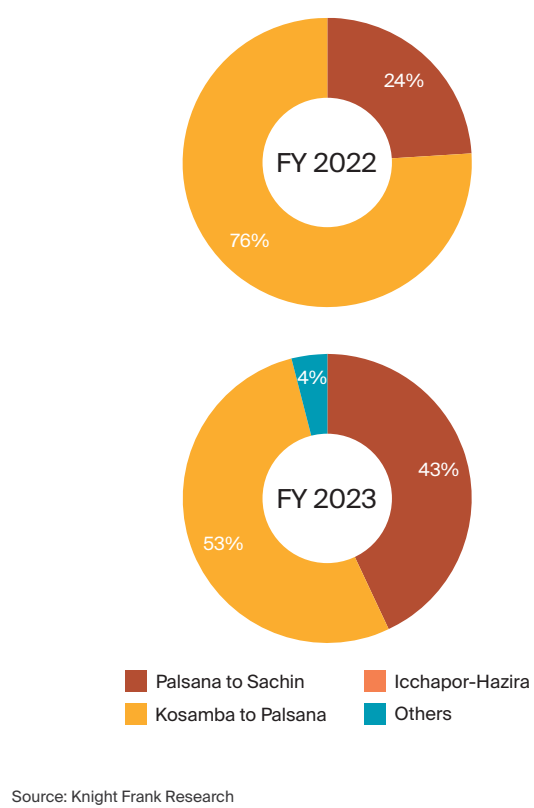
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------------|-----------|-------------------------|--|--|
| Kosamba to Palsana belt | Kosamba | 16-28 | 183-248 (17-23) | 151-172 (14-16) |
| | Kadodara | 35-65 | 226-280 (21-26) | 183-215 (17-20) |
| | Palsana | 25-45 | 215-269 (20-25) | 172-205 (16-19) |
| | Vesma | 20-35 | 194-237 (18-22) | 161-183 (15-17) |
| Palsana to Sachin belt | Palsana | 25-45 | 215-269 (20-25) | 172-205 (16-19) |
| | Sachin | 40-100 | 237-301 (22-28) | 183-215 (17-20) |
| Ichhapore-Hazira belt | Hazira | 25-50 | 226-269 (21-25) | 183-215 (17-20) |
| | Ichhapore | 35-60 | 237-291 (22-27) | 183-215 (17-20) |

Source: Knight Frank Research

VADODARA

WAREHOUSING MARKET

- Vadodara is the third largest city of Gujarat after Ahmedabad and Surat. It is referred to as the Gateway to the Golden Corridor as it is connected to key industrial centres like Delhi, Mumbai and Ahmedabad. The city is also within the Delhi Mumbai Industrial Corridor (DMIC).
- The Vadodara market is a prominent industrial centre in western India with focus on the pharmaceutical, electrical, heavy engineering and biotechnology industries. Many automobile companies also have their manufacturing facilities in Vadodara.
- Vadodara has 3 major warehousing clusters: Padamala-Ranoli belt in the north, Savli-Jarod-Halol belt in the east and Makarpura-Por belt in the south.
- Padamala-Ranoli cluster is one of the oldest clusters in close proximity to the Ahmedabad Vadodara Expressway. Warehouses here lack the modern infrastructure support; however, the cluster benefits due to its locational advantage and caters to consumer led demand as it is close to the intersection of the national highway and ring road. The Padamala-Ranoli cluster recorded 39% of the warehousing transactions during FY 2023 as compared with 10% of the transactions recorded during FY 2022.
- The Savli-Jarod-Halol belt in the east and the Makarpura-Por belt in the south capture the industrial demand of this region. Both clusters are endowed with good infrastructure support including good quality 3x3 roads with dividers. The industrial demand in these belts is from the pharmaceutical, electrical and heavy engineering sectors. The demand from the automobile sector in Vadodara is captured by the Savli-Jarod-Halol belt. It has emerged as the automotive hub and was declared as a Special Investment Region, under the Special Investment Region Act by the Government of Gujarat. The Savli-Jarod-Halol belt accounted for 16% of the warehousing transactions while the Makarpura-Por belt recorded 45% of the warehousing transactions during FY 2023.
- The Vadodara warehousing market recorded leasing volumes of 0.03 mn sq m (0.35 mn sq ft) during FY 2023 as compared with 0.05 mn sq m (0.53 mn sq ft) during FY 2022. The overall transaction volumes are lower in FY 2023

The warehousing market recorded leasing volumes of 0.03 mn sq m (0.35 mn sq ft) during FY 2023

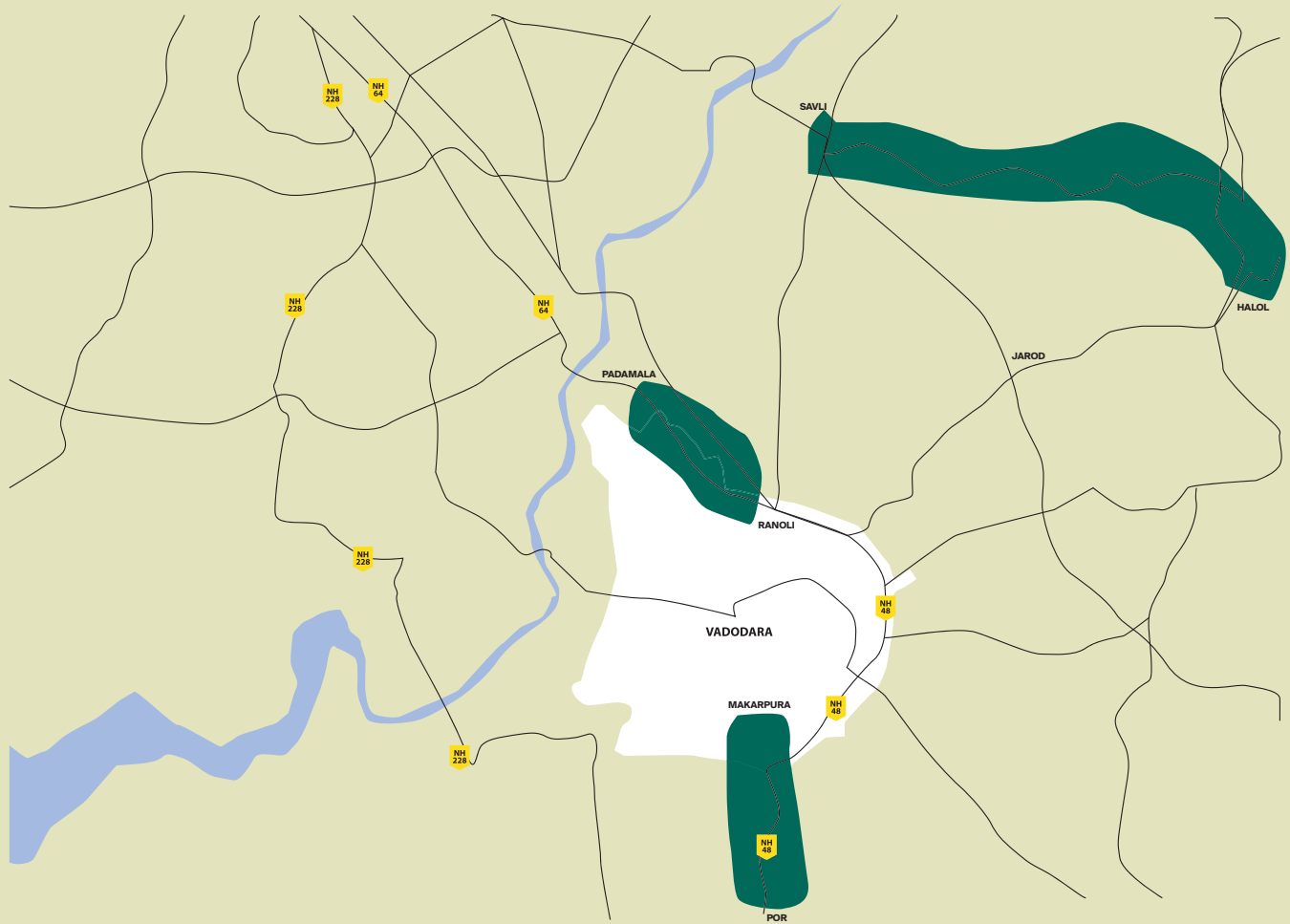
Transactions in FY 2023 were primarily driven by spaces occupied by manufacturing players accounting for 61% of the total occupier pie.

Makarpura-Por belt recorded 45% of the warehousing transactions during FY 2023.

primarily due to the dearth of quality supply in the Vadodara market. While there are some built to suit opportunities available currently, they are still some distance away from coming online.

- Transactions in FY 2023 were primarily driven by spaces occupied by other manufacturing and 3PL players accounting for 61% and 39% of the total occupier pie.
- During FY 2023, storage related warehousing transactions increased to 80% of the total transactions as compared with 51% during FY 2022. Industrial segments which involve various types of light or heavy manufacturing activity accounted for the remaining 20%.
- The land rates in Varodara mostly range between 17-45 mn/acre, except for locations like Makarpura and Chhani, where they range between 60-150 mn/acre. The Savli-Jarod-Halol micro market has emerged as an affordable market with land rates ranging between 17-30 mn/acre. Land rates in the Padamala-Ranoli belt are comparatively higher ranging between 22-45 mn/acre.
- The rental value of Grade A spaces in the Savli-Jarod-Halol micro market fall between 194-237/sq m/ month (18-22/sq ft/month). Similar rental values are observed in the Padamala-Ranoli micro market. The rentals for Grade A spaces in the Makarpura-Por micro market are slightly higher ranging between 194-291/sq m/month (18-27/sq ft/month). It is to be noted, Vadodara warehousing spaces are primarily available in a built to suit model with limited ready inventory. This has led to warehousing rents being slightly higher than the rents observed in primary markets such as Ahmedabad.
- Considering the impetus given by the Indian Government to manufacturing, growth in the warehousing markets of Vadodara will be augmented by the advancement in the chemicals, engineering, automobile, and its ancillary industries, going forward. The expansion of the 3PL sector is slated to continue given the growing popularity and ease of last mile connectivity. The Delhi Mumbai Industrial Corridor (DMIC) passing through the city will further add to the locational advantage which is expected to boost occupier demand.

Major warehousing locations in Vadodara



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|----------------------|---|
| Savli-Jarod-Halol | Savli-Halol Road, Vadodara-Halol Road, Manjusar |
| Makarpura-Por-Karjan | Makarpura, Por, Karjan |
| Padamala-Ranoli | Padamala, Ranoli |
| Others | Chhani, Waghodia |

Source: Knight Frank Research

Major infrastructure in Vadodara

| Name | Type |
|---|---------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Industrial corridor |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|--------------------------|----------------------|
| Nexus Industrial Park | Savli-Jarod-Halol |
| Adani Logistics Park | Padamala-Ranoli |
| Shakti Logistics | Makarpura-Por-Karjan |
| Mascot Industrial Park | Savli-Jarod-Halol |
| Contrans Industrial Park | Makarpura-Por-Karjan |

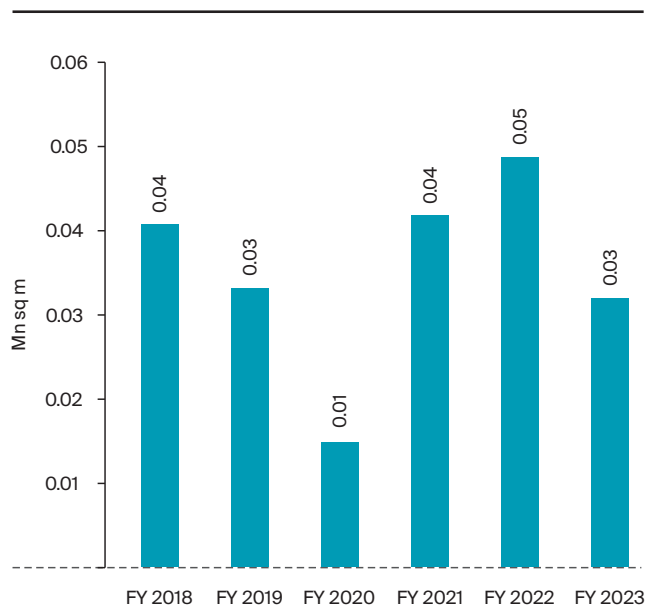
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------------|-------------------|----------------------|
| Asian Paints | Manufacturing | Makarpura-Por-Karjan |
| TVS Supply Chain | 3PL | Savli-Jarod-Halol |
| Deepak Nitrite Ltd | Manufacturing | Padamala-Ranoli |
| CEVA Logistics | 3PL | Padamala-Ranoli |
| Vcare Engineering | Manufacturing | Makarpura-Por-Karjan |

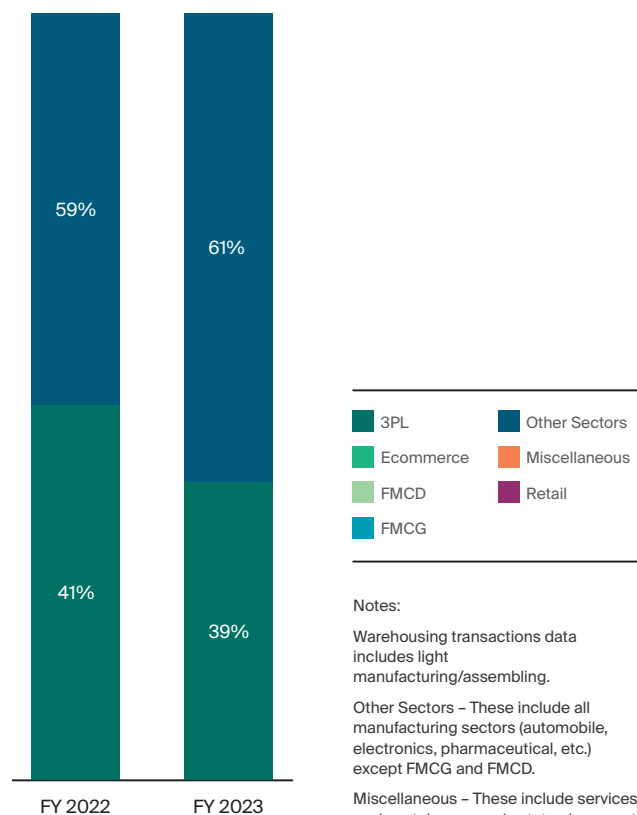
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

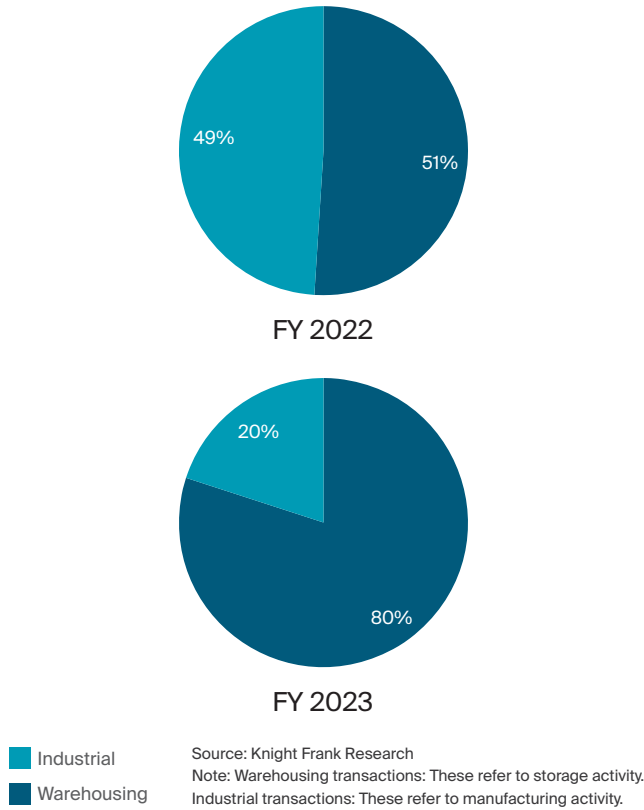
Notes:

Warehousing transactions data includes light manufacturing/assembly.

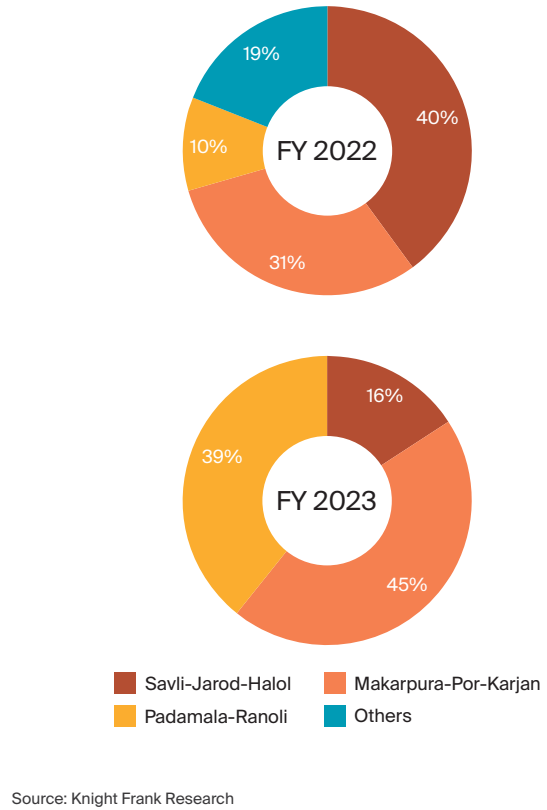
Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-------------------|---------------------|-------------------------|--|--|
| Savli-Jarod-Halol | Vadodara-Halol Road | 17-26 | 194-237 (18-22) | 161-194 (15-18) |
| | Savli-Manjusar | 20-30 | 194-258 (18-24) | 151-194 (14-18) |
| Makarpura- por | Makarpura | 50-150 | 237-291 (22-27) | 194-215 (18-20) |
| | Por | 20-40 | 194-237 (18-22) | 172-194 (16-18) |
| | Karjan | 15-25 | 194-215 (18-20) | 161-194 (15-18) |
| Others | Chhani | 50-150 | 237-291 (22-27) | 194-215 (18-20) |
| | Waghodia | 17-30 | 194-237 (18-22) | 161-194 (15-18) |
| Padamala-Ranoli | Padamala | 25-50 | 194-237 (18-22) | 140-183 (13-17) |
| | Ranoli | 25-50 | 194-237 (18-22) | 129-183 (12-17) |

Source: Knight Frank Research

VAPI

WAREHOUSING MARKET

- Vapi is an industrial town located near the banks of the Daman Ganga River and is surrounded by the Union Territories of Daman & Diu and Dadra Nagar Haveli. It is part of the industrial belt known as the Golden Corridor starting from Ahmedabad and extending till Vapi. The corridor is known for its immense development in manufacturing facilities. Vapi has majorly evolved as a chemical and chemical product manufacturing hub.
- Vapi has a geographical advantage in terms of connectivity as NH 48 & Silvassa Road are two major roadways that cut through the city. NH 48 is a part of the golden quadrilateral passing through Vapi city and connecting it to the key metro cities of Mumbai and Ahmedabad.
- Warehousing in Vapi is largely fragmented with small clusters located in and around the city as it has numerous small-scale chemical industries. The key belts, however, are concentrated in 3 major locations, namely, Vapi-Bhilad belt, Daman and Silvassa. The important warehousing locations around Vapi are Bhilad, Tumb, Naroli and Masat. There is very little speculative stock in Vapi and most of the warehousing is built-to-suit. Warehousing demand during FY 2023 was concentrated only in the Vapi-Bhilad belt.
- The city leasing volumes increased by 8% YoY, from 0.03 mn sq m (0.31 mn sq ft) in FY 2022 to 0.03 mn sq m (0.33 mn sq ft) in FY 2023. The leasing demand in FY 2023 was divided between warehousing requirements and industrial use with each taking up a share of 59% and 41% respectively.
- Warehousing occupier demand is primarily driven by the manufacturing sector followed by retail and 3PL. Vapi is benefiting from occupiers penetrating tier 2 cities. 41% of the demand during FY 2023 was from the manufacturing sector, followed by retail and 3PL occupiers at 36% and 23% share respectively. E-commerce companies have not taken up space in Vapi and serve this region through their 3PL partners.
- Land rates for warehousing development have increased sharply during FY 2023 with Vapi emerging as the highest land value market. Given the locational advantages Vapi has with respect to its connectivity to Mumbai and Ahmedabad, demand for developing warehouses in this region has increased and is

The city leasing volumes increased by 8% YoY.

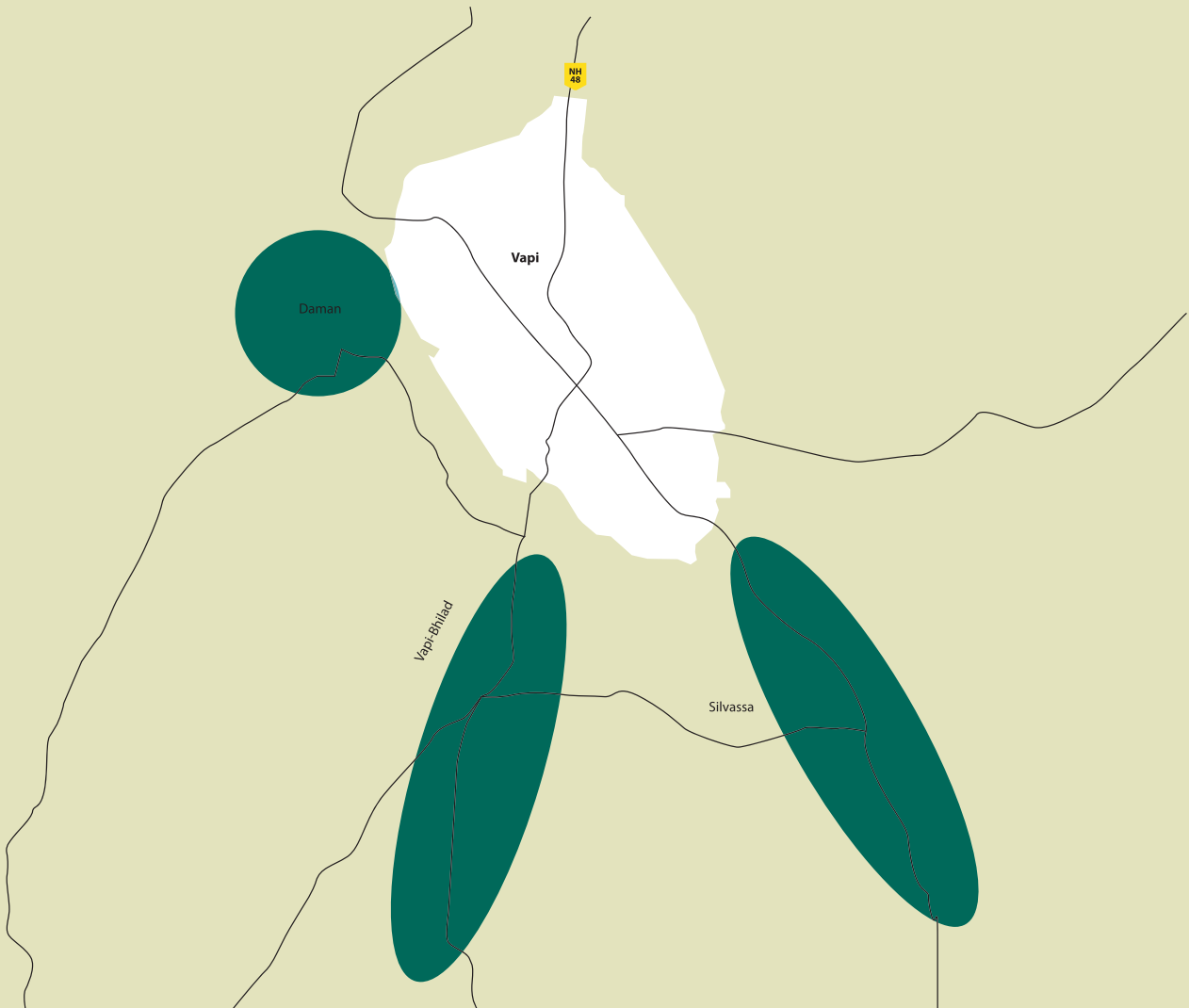
Land rates for warehousing development have increased sharply during FY 2023

Warehousing occupier demand is primarily driven by the manufacturing sector followed by retail and 3PL.

commensurate with land rate appreciation. Rents for Grade A spaces in this belt too has increased, however, it has largely remained stable for Grade B spaces.

- Warehousing demand for Vapi is slated to increase especially in the manufacturing space in the coming years, considering that it is the chemical manufacturing hub of India and the chemicals industry is continuously expanding its capacities to support the increase in demand from domestic and international markets.

Major warehousing locations in Vapi



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|---------------------|--|
| Vapi-Bhilad | Vapi, Valvada, Mohanfatak, Bhilad, Nandigram, Daheli, Bhathi Karambeli |
| Daman | Morai, Jamburi, Bhimpore |
| Silvassa | Silvassa |
| Others | Tumb, Vankas |

Source: Knight Frank Research

Major infrastructure in Vapi

| Name | Type |
|---|---------------------|
| Delhi-Mumbai Industrial Corridor (DMIC) | Industrial corridor |
| Delhi-Mumbai Expressway | Express highway |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|-------------------------------|---------------------|
| Aveny Logistics & Warehousing | Vapi-Silvassa-Daman |
| Galaxy Hubco | Vapi-Silvassa-Daman |
| Scalar Group | Vapi-Silvassa-Daman |
| Desai & Brothers | Vapi-Silvassa-Daman |
| Morai Group | Vapi-Silvassa-Daman |

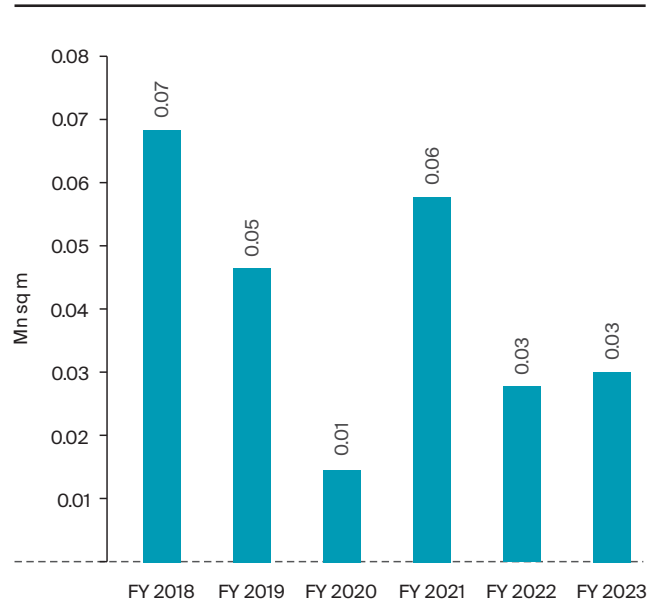
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|-------------------|-------------------|-------------------|
| Trent | Retail | Vapi-Bhilad |
| Kulday Technopack | Manufacturing | Vapi-Bhilad |
| H-Pack Packaging | Manufacturing | Vapi-Bhilad |
| Delhivery | 3PL | Vapi-Bhilad |
| V-trans | 3PL | Vapi-Bhilad |

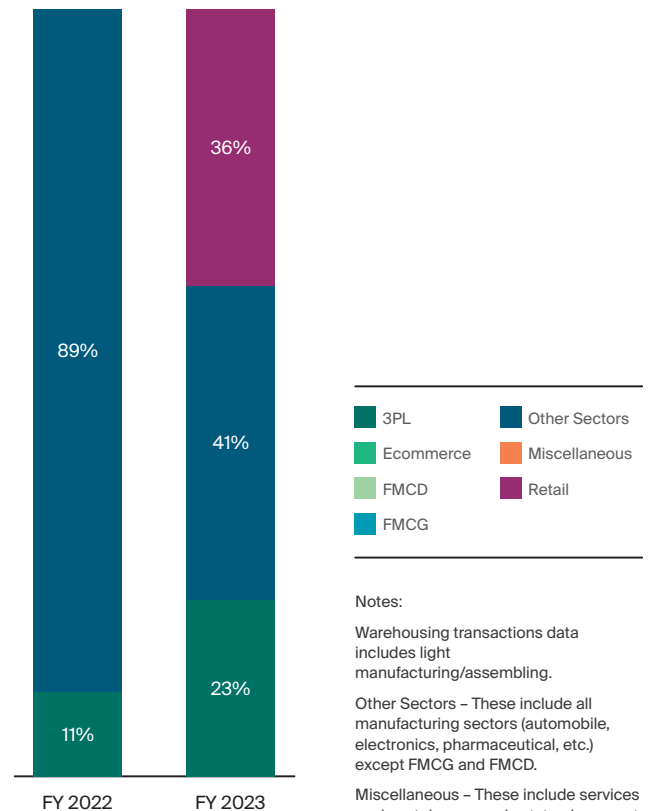
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Notes:

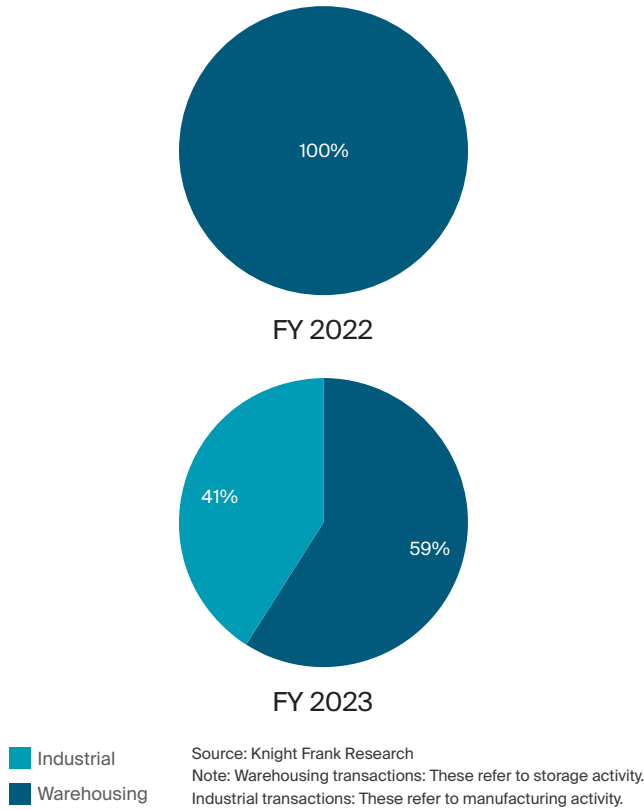
Warehousing transactions data includes light manufacturing/assembly.

Other Sectors - These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

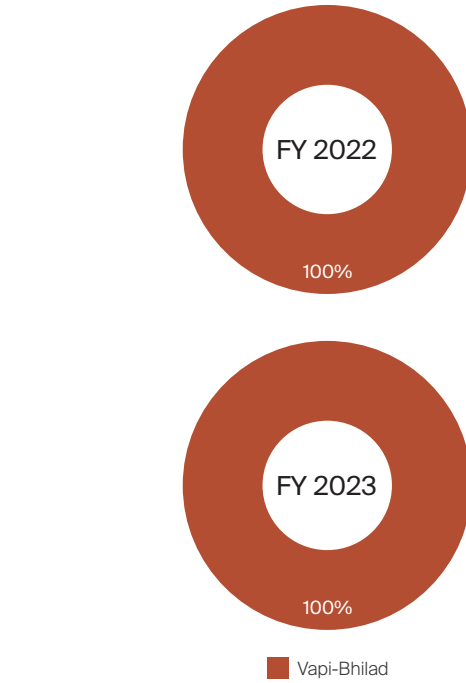
Miscellaneous - These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Source: Knight Frank Research

Transaction share by end-use of space



Cluster-split of transaction



Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|---------------------|----------|-------------------------|--|--|
| Vapi-Silvassa-Daman | Vapi | 50 – 80 | 215–258 (20–24) | 161–205 (15–19) |
| | Bhilad | 20 – 40 | 183–215 (17–20) | 151–183 (14–17) |
| | Daman | 20 – 50 | 194–237 (18–22) | 151–183 (14–17) |
| | Silvassa | 20 – 50 | 194–237 (18–22) | 151–183 (14–17) |
| | Umargaon | 12 – 30 | 183–215 (17–20) | 140–172 (13–16) |
| | Sarigam | 25 – 60 | 215–258 (20–24) | 161–194 (15–18) |

Source: Knight Frank Research

VISAKHAPATNAM

WAREHOUSING MARKET

- Visakhapatnam is a port city on the east coast of India. It is one of the nation's top 13 ports and the fifth busiest cargo port overall. It is also the only natural port along India's eastern coast.
- Owing to its strategic geography, Visakhapatnam has functioned as a trade centre since colonial times. Modern infrastructure has helped harness the city's trade potential further. While the upcoming greenfield international airport will boost connectivity, Visakhapatnam is also slated to be developed as a Smart City under the first phase of Smart Cities Mission.
- The Visakhapatnam Chennai Industrial Corridor component of the city, a key node on the East Coast Economic Corridor, is already under development. A network of arterial highways, including Beach Road, Daba Gardens Road, Waltair Main Road, and Dwaraka Nagar Road, facilitate intra-city connection. National Highway 16 (NH-16), often known as the Chennai-Kolkata Highway, goes through the city.
- The demand for warehousing in Visakhapatnam has historically been driven by several sectors of the economy. Visakhapatnam has a significant presence of heavy industries like dredging, shipbuilding, thermal energy, oil & petroleum, and steel fabrication. Fishing is also a prominent industry in the city and makes up for most of its exports.
- The Gajuwaka-Auto Nagar and Madhurwada clusters, which encompass the northern and port-adjacent portions of the city respectively, are the two most important warehousing clusters in Visakhapatnam. In addition to these, there are tiny pockets of warehousing in the Atchutapuram Special Economic Zone (SEZ), Parawada, and Vuda Colony-Mindi industrial regions.
- During FY 2023, the Gajuwaka-Auto Nagar cluster accounted for 29% of the warehousing transaction whereas the Madhurwada cluster accounted for 71% of the warehousing transaction.
- Transactions for the Visakhapatnam warehousing market have increased sharply by 265% YoY during FY 2023, following a 228% YoY growth during FY 2022. This growth in transaction is driven by the increase in demand

Transactions for the Visakhapatnam warehousing market have increased sharply by 265% YoY during FY 2023,

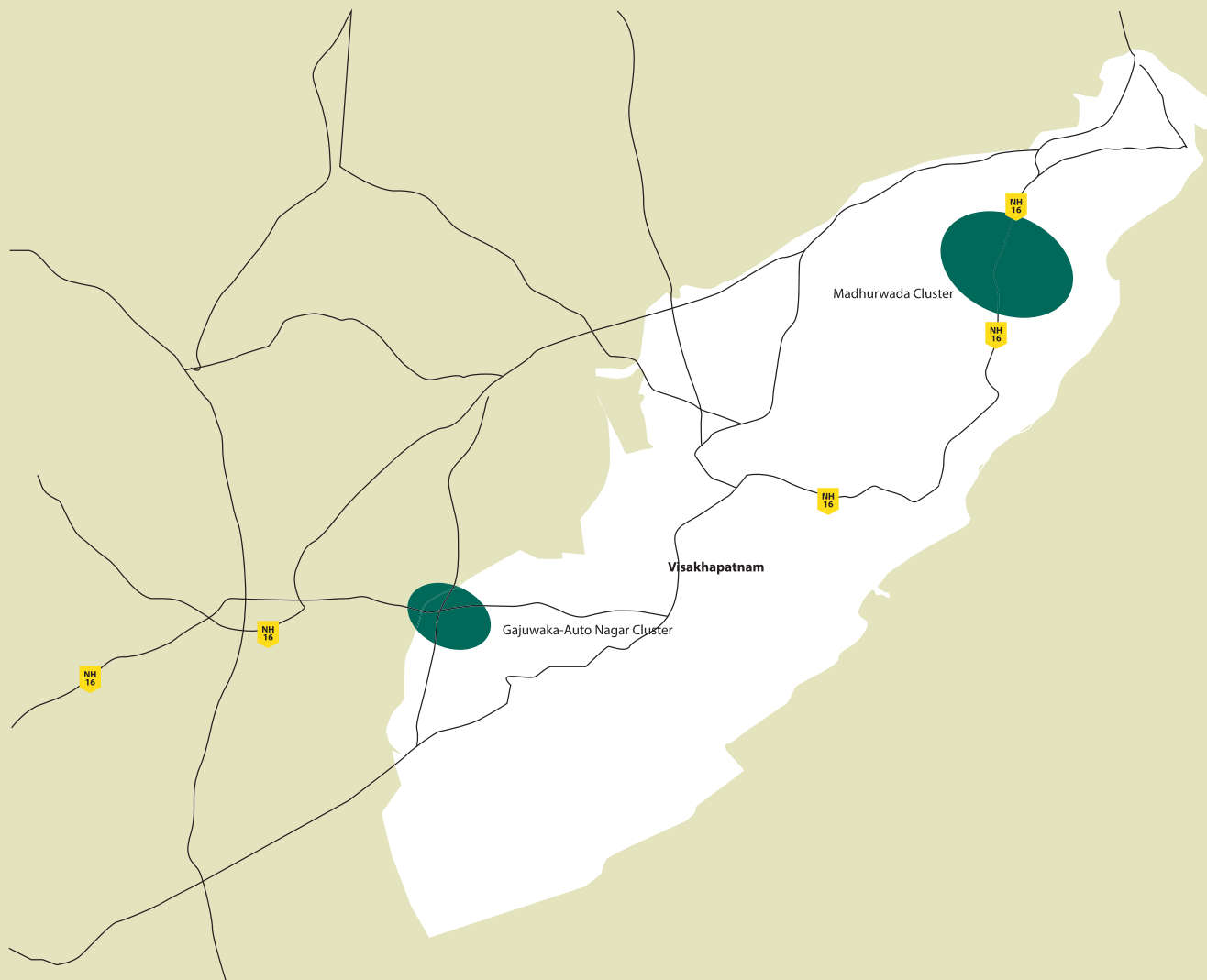
Retail and manufacturing were the major drivers during FY 2023 accounting for a warehousing demand share of 35% and 33% respectively.

Land rates have remained stable during FY 2023 whilst there was a slight appreciation in rents for Grade A and Grade B warehouses.

from the retail, manufacturing and e-commerce sectors. The market volume stood at 0.03 mn sq m (0.3 mn sq ft) during FY 2022 and has increased to 0.11 mn sq m (1.2 mn sq ft) during FY 2023.

- Retail and manufacturing were the major drivers during FY 2023 accounting for a warehousing demand share of 35% and 33% respectively. The demand from e-commerce and 3PL players accounted for 13% and 12% of the total demand respectively.
- Land rates have remained stable during FY 2023 whilst there was a slight appreciation in rents for Grade A and Grade B warehouses. The city is dominated by standalone warehouses, primarily of the Grade B category. Rentals for Grade A warehouses range between INR 258-312/sq m/month (24-29 sq ft/ month), and for Grade B warehouses between INR 237-280/sq m/month (22-26/sq ft/month).
- Visakhapatnam has undergone a major transformation on all fronts, from infrastructure development to education and IT. Considering the above, the city has immense potential to further harness its potential as a warehousing hub given the impetus these allocated infrastructure projects will give the port city.

Major warehousing locations in Visakhapatnam



■ Warehousing cluster

Source: Knight Frank Research | Map is for representation and not to scale

Classification of warehousing locations into major clusters

| Warehousing cluster | Major warehousing locations |
|-----------------------------|--|
| Gajuwaka-Auto Nagar cluster | Auto Nagar and surrounding areas, Gajuwaka |
| Madhurwada cluster | Madhurwada |

Source: Knight Frank Research

Major infrastructure in Visakhapatnam

| Name | Type |
|---|---------|
| Beach Road | Road |
| Waltair Main Road | Road |
| Dwaraka Nagar Road | Road |
| Chennai Kolkata Highway / NH 16 | Road |
| Visakhapatnam Chennai Industrial Corridor | Road |
| Visakhapatnam Port | Sea |
| Visakhapatnam Airport | Airport |

Source: Knight Frank Research | Note: NH stands for National Highway

Select warehouse projects

| Warehouse project | Warehouse cluster |
|-------------------|-------------------------------|
| A-STAR Logistics | Gajuwaka – Auto Nagar Cluster |
| UTPL Logistics | Gajuwaka – Auto Nagar Cluster |

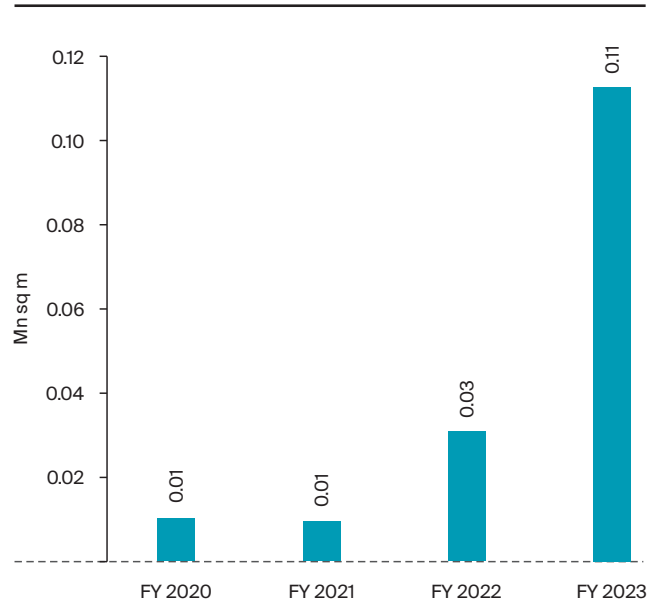
Source: Knight Frank Research

Top transactions during FY 2023

| Occupier | Occupier industry | Warehouse cluster |
|--------------|-------------------|-----------------------------|
| Reliance | Retail | Madhurwada Cluster |
| Flipkart | Ecommerce | Gajuwaka-Auto Nagar Cluster |
| Asian Paints | Manufacturing | Madhurwada Cluster |
| Udaan | 3PL | Gajuwaka-Auto Nagar Cluster |
| L&T | Manufacturing | Madhurwada Cluster |

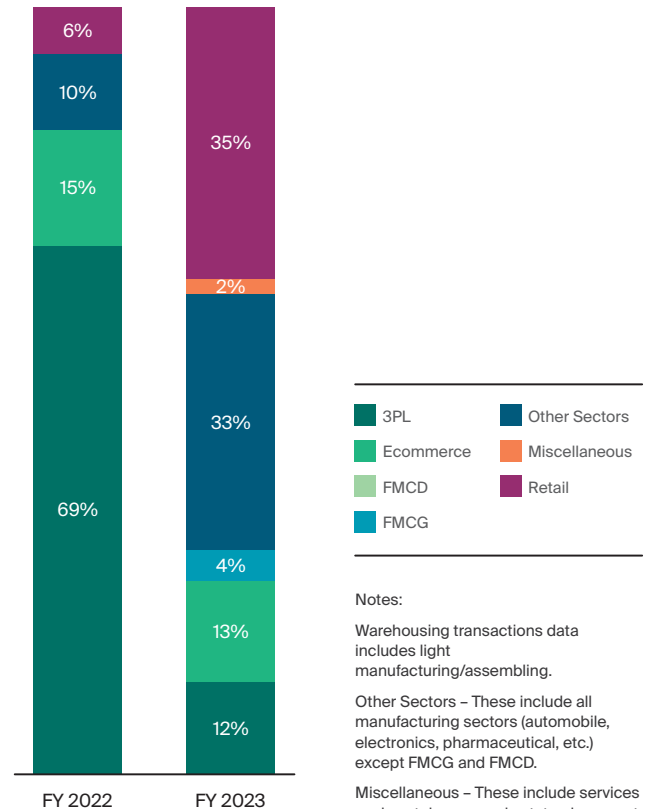
Source: Knight Frank Research

Warehousing market transaction volume



Source: Knight Frank Research

Industry-split of transaction volume



Source: Knight Frank Research

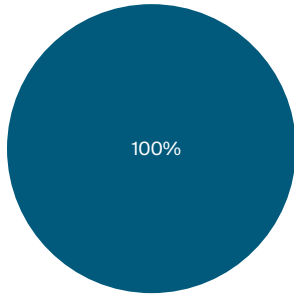
Notes:

Warehousing transactions data includes light manufacturing/assembly.

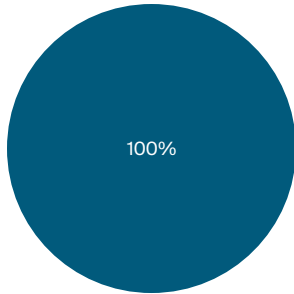
Other Sectors – These include all manufacturing sectors (automobile, electronics, pharmaceutical, etc.) except FMCG and FMCD.

Miscellaneous – These include services such as telecom, real estate, document management, agricultural warehousing and publishing.

Transaction share by end-use of space



FY 2022

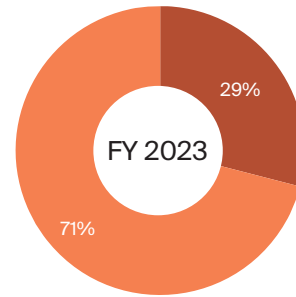
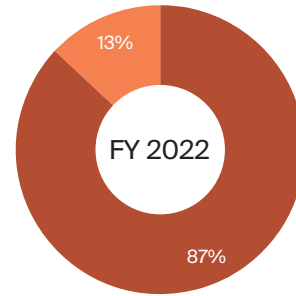


FY 2023

- Industrial
- Warehousing

Source: Knight Frank Research
 Note: Warehousing transactions: These refer to storage activity.
 Industrial transactions: These refer to manufacturing activity.

Cluster-split of transaction



- Gajuwaka Cluster
- Madhurwada

Source: Knight Frank Research

Land rate and rents

| Warehouse cluster | Location | Land rate (INR mn/acre) | Grade A Rent in INR/sq m/month (INR/sq ft/month) | Grade B Rent in INR/sq m/month (INR/sq ft/month) |
|-----------------------------|-----------------------------|-------------------------|--|--|
| Gajuwaka-Auto Nagar cluster | Auto Nagar and surroundings | 35-55 | 258-312 (24-29) | 237-280 (22-26) |
| Madhurwada cluster | Madhurwada | 45-75 | 258- 312 (24-29) | 237-280 (22-26) |

Source: Knight Frank Research



“

The Industrial & Logistics real estate industry in India is undergoing a remarkable transformation, marking its coming of age, with an astounding annual absorption exceeding 40 million square feet. This impressive growth is driven by robust demand and a clear shift towards superior quality facilities, opening up enticing prospects for both real estate developers and investors. The evidence lies in the surge of new players entering the market over the past two years. As we move forward, the next five years promise to introduce innovative development typologies, including in-city and multi-storey logistics assets, designed to meet the ever-evolving demands of occupiers for resilient and efficient supply chains.

”

Sidharth Menda
Director
RMZ Industrial & Logistics

“

Grade A+ warehouses continue to be undersupplied across major metropolitan cities in India. The domestic demand is strong and growing in the country and Grade A+ warehouses will enable tenants to operate more efficiently.

”

Vineet Sekhsaria
SVP, Head of India
Prologis



AGRA

WAREHOUSING MARKET

- Agra is the fourth most populous city in Uttar Pradesh located around 220 kms from India's national capital, New Delhi. Tourism, handicraft, agriculture, and manufacturing are the backbone of its local economy. Ranked 4th amongst 100 smart cities in India by the Ministry of Housing and Urban Affairs, Agra's business profile continues to expand beyond that of a cultural and tourism hub.
- In FY 2023, Agra registered 0.01 mn sq m (0.07 mn sq ft) of warehousing leasing, 50% lesser than FY 2022. The Agra warehousing market is underdeveloped and is yet to witness sustained growth. The quality of warehouses is of Grade B or C leased out by local developers. The manufacturing players continue to dominate the leasing activities in FY 2023 comprising a share of 62% of the aggregate transaction volume.
- The Agra-Kolkata route on National Highway 19 (NH-19) and the Delhi-Agra route on National Highway 44 (NH-44) have a concentration of small and mid-sized Grade B

warehousing facilities in a fragmented manner. While a few old industrial estates in Sikandra and Khandhari also have Grade B warehousing stock, Artoni, located around the NH-19 corridor, is an emerging warehousing location in Agra. In FY 2023, the leasing activity was predominantly held in the NH-19 corridor.

- Due to limited industrial activity in Agra compared to other cities of Uttar Pradesh and Northern India, the transaction volumes here continue to remain low. In future, however, a growth in consumption needs and fast paced development of infrastructure such as expressways, alongside industrial infrastructure such as the proposed Integrated Manufacturing Cluster (IMC) under the Amritsar-Kolkata Industrial Corridor (AKIC) project, should support warehousing opportunities in Agra.

KOCHI

WAREHOUSING MARKET

- Kochi, the hub of Kerala's financial and commercial system, is a key port on the route between the Indian Ocean, the Arabian Sea and the Laccadive Sea.
- It has India's first facility for transshipment. The port is situated on Willingdon Island and Vallarpadam in the lake of Kochi, and is the largest container transshipment facility in India. The International Container Transshipment Terminal is also a part of the Kochi Port.
- Kochi has benefited from a number of factors such as its coast, proximity to major international shipping centres, the availability of a port and interconnecting rivers, besides an everlasting demand for city supplies.
- The Kalamassery-Edayar cluster and the NH-85 cluster are Kochi's two primary hubs for warehousing activities. To serve a wider range of clients from a single location, many 3PL and manufacturing businesses have built warehouses in Kochi. The development of top-notch pre-engineered warehousing facilities in Kochi have accelerated in recent years due to the proliferation of e-commerce giants like Flipkart.
- In FY 2023, the Kochi warehousing market's total

transaction volume was 0.08 mn sq m (0.9 mn sq ft), up 239% YoY. Of the total transactable space in FY 2023, 53% share or 0.04 mn sq m (0.5 mn sq ft) was transacted by Flipkart (e-commerce). The retail industry was the second-most active in the market with 27% share of the total transactable space during the year.

- Rentals for Kochi warehousing facilities range between INR 194-237/sq m/month (INR 18-22/sq ft/month) in prominent warehousing locations like North Paravur, Ernakulam, Kalamassery, Varapuzha, Koonammave, Eloor, Vytilla, Edapally, Perumbavoor, etc. Rents for Grade A warehousing facilities such as those taken up by Flipkart, GSK and Pepsi remained in the range of INR 205-248/sq m/month (INR 19-23/sq ft/month), while rents for Grade B warehouses stood in the range of INR 172-215/sq m/month (INR 16-20/sq ft/month).
- The rebound in transaction volumes observed during FY 2023 highlights Kochi's potential as an expanding warehousing market. The e-commerce sector has been concentrating on bolstering its supply chains throughout the underserved regions of the nation and are expected to continue to drive volumes in the future.

- The jump in transaction volumes has dramatically reduced market vacancies, and queries for built-to-suit facilities have gone up. Rentals have significantly improved in stability over the past year, despite the substantial

reduction of incentives such as rent-free periods. The market has made a significant recovery over the past year and is expected to continue to gain steam as Kochi's importance in the supply chain continues to rise.

PATNA

WAREHOUSING MARKET

- Patna forms an important link in north-east India's supply chain in addition to connecting warehousing hubs such as Lucknow, Ranchi and Guwahati that together constitute the supply chain in this region. It is also the capital of the state of Bihar and its largest city.
- Situated in the third most populous state of India, Patna caters to the sizeable consumption base in Bihar's cities such as Darbhanga, Muzaffarpur, Gaya and Bihar Sharif.
- While it is still a largely unorganized market, the entry of e-commerce players such as Amazon and Flipkart, besides global multinationals such as Coca Cola, Pepsi and Samsung over the last few years has spurred the development of high-quality pre-engineered warehousing facilities. Most of the warehouse development is taking place on the Patna-Gaya Road to the south, NH-922 to the west and the NH-31 to the east.
- The Patna warehousing market has attained record transaction levels in FY 2023 with annual volumes breaching the one million sq ft mark for the first time. The warehousing volume grew 18% YoY in FY 2023 to 0.09 mn sq m (1.01 mn sq ft) with almost all occupier groups contributing to the year's tally. 3PL companies who have anchored the Patna market in recent years took up 33% of the total volume followed by the e-commerce sector at 17%, as companies such as Flipkart expanded their existing operations by a further 0.02 mn sq m (0.17 mn sq ft). The manufacturing and retail sectors accounted for 19% each while the balance 12% was taken up by the FMCG sector.
- Patna's warehousing market has developed in an approximate radius of 35 km toward the east, west and south of the city. Rental rates for warehousing facilities range between INR 161-248/sq m/month (INR 15-23/sq ft/month) in prominent warehousing locations like Bihta, Gaurichak, Fatuha, Zero Mile, Deedarganj and Khagaul. Higher grade warehousing facilities such as those taken up by Coca Cola, Flipkart, GSK and Pepsi trade at the higher end of the range, while the converse is true for Grade B warehouses.
- New and higher-grade warehousing development coming up in Hajipur which is approximately 20 km north of Patna, is attracting interest from logistics and warehousing players and has picked up momentum just after the expansion of Gandhi Setu. This location houses prominent occupiers like

Britannia Industries, Hindustan Unilever, Pepsico, Tata Consumer among others. The e-commerce giant Flipkart took up close to 0.2 mn sq ft of warehousing space in Hajipur during FY 2022. Hajipur is well placed to grow as a warehousing location within Patna given the growing occupier interest here and in its immediate vicinity.

- Transaction volumes had reached a new high in FY 2022 and the fact that they breached that level in FY 2023 underscores the potential of Patna as a growing warehousing market. The 3PL and e-commerce sectors have been focusing on strengthening their supply chain across the underserved north-east region in the country and are expected to drive volumes going forward. The increasing appetite of e-commerce players like Flipkart is evident in the kind of enquiries seen towards the end of the year.
- Rental levels have also firmed up considerably over the past year as the increased demand along with improving warehouse specifications and occupier adherence to compliance drove rental levels higher. Patna's strategic importance in North-East India's supply chain and its increasingly diverse occupier profile looking to expand operations, should help the city's warehousing market to sustain momentum in FY 2024 as well.

VIJAYWADA

WAREHOUSING MARKET

- Vijayawada, the second-largest city in the Indian state of Andhra Pradesh, is located on the country's east coast and is considered to be the commercial hub of the state.
 - The city is situated on the Golden Quadrilateral and has one of the busiest roads on the East Coast since it serves as a crucial hub for north-south travel.
 - As a thriving commercial and industrial metropolis, it is home to a wide variety of industries including oil and chemical, packed food products, automotive, and spare parts sectors.
 - In FY 2023, the city saw significant growth from prominent 3PL firms like Delhivery and Proconnect as well as traction from major e-commerce players like Ajo and Flipkart.
 - In FY 2023, warehousing activity remained robust thanks to sizable deals from the e-commerce and 3PL industries. Transactions in the Vijaywada warehousing market reached 0.09 mn sq m (1.0 mn sq ft) in FY 2023, up 22% from FY 2022.
- E-commerce made the largest contribution accounting for 62% of the total demand. At 22% of the market, the 3PL industry had the second highest share, behind manufacturing sector's 10%.
 - Rent rates for Vijayawada warehousing facilities range between INR 194-258/sq m/month (INR 18-24/sq ft/month) in prominent warehousing locations. Rents for Grade A warehousing facilities such as those taken up by Flipkart and Reliance were in the range of INR 226-258/sq m/month (INR 21-24/sq ft/month), while rents for Grade B warehouses stood in the range of INR 194-226/sq m/month (INR 18-21/sq ft/month).
 - The demand for warehouse facilities will likely increase in the near future due to the possibility of increased consumer demand in the south-eastern states, especially from retailers, online sellers, and third-party logistics (3PL) providers in the Vijayawada market.

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