Knight Frank

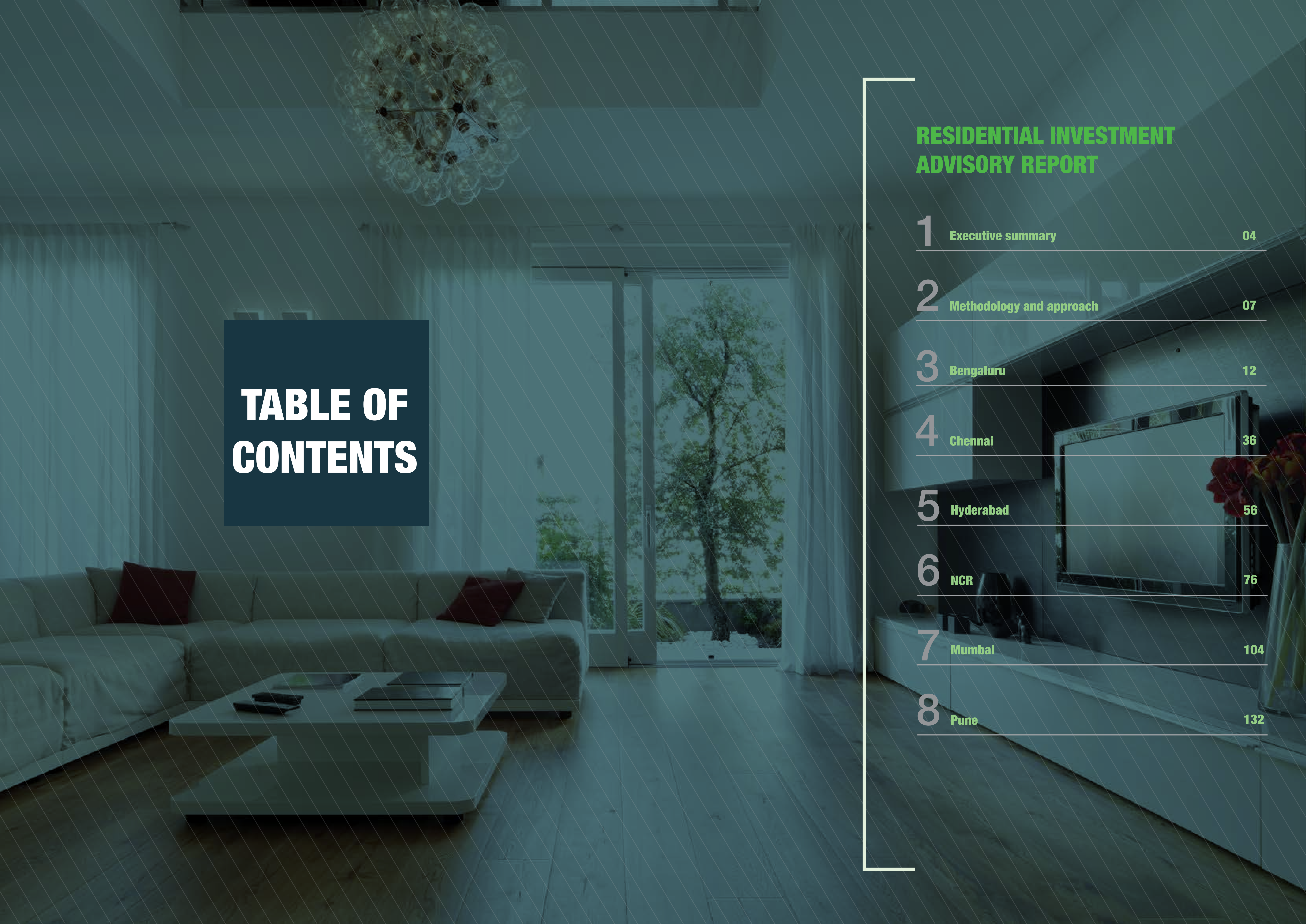
RESIDENTIAL

INVESTMENT ADVISORY

REPORT 2016

Knight Frank

The report identifies the top residential destinations in India from an investment point of view for the next five years [2016 - 2020]



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RESIDENTIAL INVESTMENT ADVISORY REPORT

Executive Summary

The Indian residential sector has been reeling under tremendous pressure since the last couple of years and demand is expected to touch a new low in 2015. The slowdown is being witnessed not just in the premium segment but across all types of residential properties. The revival in the residential segment that we had expected, owing to the positive sentiment in the economy on the back of the formation of the new government at the Centre, has not materialised. Additionally, homebuyer interest has not yet picked up, due to issues such as stalled projects, unaffordable prices, delays in the completion of major infrastructure projects and low credibility of developers. On the contrary, the office space market has witnessed a remarkable recovery in the last two years and vacancy levels are expected to touch a new low by the end of the current year. Unfortunately, the rub-off effect of the office market is still not visible in the residential segment.

The demand slowdown in the residential market has resulted in a poor price performance over the last three years,with most cities not even able to exceed even the inflation rate in the economy. While the weighted average price in the six major cities of India- Mumbai, NCR, Bengaluru, Pune, Chennai and Hyderabad - have appreciated in the range of 12% to 23% since 2012, consumer price inflation has increased by 24% during the same period.

In 2012, we published our first residential investment report titled, ‘India’s top residential destinations to invest in’, wherein we had identified 13 locations across five cities as the top destinations to invest in. Three years have passed since our last recommendation, and we believe it is the right time to revisit these destinations on the back of the changed economic scenario in the country.

The performance in most of the selected destinations is on track, with the exception of a few markets in NCR and Chennai. Prices in most of these locations have significantly outperformed the overall price growth in their respective cities. While prices in Hebbal (Bengaluru) have appreciated by 67% since our last recommendation, they have increased by 50% in Ulwe (Mumbai) and Hinjewadi (Pune). The demand drivers in these destinations have undergone significant changes since our last report,whether in terms of delay in the commencement of infrastructure projects, poor sentiment among homebuyers, litigations and other legal issues or a supply glut of new projects. Taking cognizance of these changes and their resultant impact on prices, we have revised our price estimate for the remaining two years of the initial five-year time horizon. A detailed explanation can be found in the respective city chapters.

Performance of the previously recommended destinations

Previously recommended destination	City	Average price (₹/sq ft)		Price growth in the investment destination		Price growth in the city	
		Recommended in	Current price				
		2012	2015	2012-2015	Average annual	2012-2015	Average annual
Hebbal	Bengaluru	4,250	7,100	67%	19%	23%	7%
Ulwe	Mumbai	4,000	6,000	50%	14%	22%	7%
Hinjewadi	Pune	4,000	6,000	50%	14%	17%	5%
Chembur	Mumbai	12,000	17,000	42%	12%	22%	7%
Wadala	Mumbai	15,000	21,000	40%	12%	22%	7%
K.R. Puram	Bengaluru	3,245	4,300	33%	10%	23%	7%
Ravet	Pune	3,950	5,100	29%	9%	17%	5%
Wakad	Pune	4,500	5,800	29%	9%	17%	5%
Tathawade	Pune	4,300	5,500	28%	9%	17%	5%
Medavakkam	Chennai	3,800	4,850	28%	8%	12%	4%
Pallikarnai	Chennai	4,200	5,000	19%	6%	12%	4%
Dwarka Expressway	NCR	4,900	5,500	12%	4%	18%	6%
Noida Extension	NCR	3,200	3,400	6%	2%	18%	6%

Source: Knight Frank Research

Going forward, we anticipate that price growth in residential properties will be considerably muted compared to the previous five years. Residential real estate will no longer be a speculative investment and will have to compete with other investment avenues, such as equities, commercial office space and commodities, among others. However, at Knight Frank, we strongly believe that any investment in real estate based on sound research can seldom go wrong, and there are ample opportunities to earn healthy returns even today.

Sound research is inherently founded on a deep understanding of the property market, along with a study of the factors that drive it. Real estate is an asset class, wherein an educated investor can mitigate the risks and enjoy the associated superior returns at the same time. Coupled with the other mainstream asset classes, this investment vehicle can make for an optimally-diversified portfolio. In most cases, investment in real estate is fraught with decisions based on gut feelings and tips, which could result in poor investments. Hence, an investor has to clearly delineate a real estate investment from speculation.

With this report, we have forayed into the subject by identifying the top residential destinations in the country from an investment point of view for the next five years (2016-2020). The destinations are residential markets that we expect will outperform in terms of appreciation in property prices. We have developed a framework built on the ‘top-down approach’ in the selection of the six most promising cities and the zones within them, and the ‘bottom-up approach’ in the selection of the top investment destinations. This approach was modelled based on our field visits to each of the residential markets and discussions with various stakeholders.

Since real estate activities are not restricted to city limits, we have considered the entire metropolitan region in our analysis. Our understanding of the local property market and experience in dealing with parameters that determine an urban centre’s growth equip us to develop the framework for this report. This primary survey, coupled with our real estate expertise, helped us to arrive at the best destinations from an investment perspective.

The residential market demand in each of the selected destinations will be driven primarily by two factors - employment generation and infrastructure development. This includes the subject market's connectivity with important locations, and social and physical infrastructure facilities available currently and in the foreseeable future. However, in certain destinations, there were variations with respect to the factors impacting future price movements, such as proximity to premium office markets, limited land availability, lifestyle changes and planned development.

Based on the above factors, we have identified 11 locations spread across Mumbai, NCR, Bengaluru, Pune, Chennai and Hyderabad, that will provide the maximum price appreciation within each of these cities in the coming five years. These locations have then been ranked on an all India basis. Madh-Marve (Mumbai) has been identified as the top investment destination in India. Ulwe (Mumbai) and New Airport Road in Viman Nagar (Pune) have emerged as the second and third, respectively. We recommend that investors exploit the opportunities currently available in these destinations and thereby maximise returns from the residential market of India.

Top residential investment destinations

Rank	Location	City	2015			2020E			Price growth	
			Price (₹/sq ft)			Price (₹/sq ft)				
			Min	Max	Avg	Min	Max	Avg	2015-2020	CAGR
1	Madh - Marve	Mumbai	12,000	15,000	13,500	23,300	29,000	26,200	94%	14.2%
2	Ulwe	Mumbai	5,500	6,500	6,000	9,300	11,000	10,200	70%	11.2%
3	New Airport Road, Viman Nagar	Pune	6,500	8,000	7,250	10,500	13,000	11,800	63%	10.2%
4	Panathur - Varthur	Bengaluru	3,300	5,400	4,350	5,300	8,700	7,000	61%	10.0%
5	Majiwada - Kasarvadavali	Mumbai	7,000	9,000	8,000	11,100	14,300	12,700	59%	9.7%
6	Vishrantwadi	Pune	5,600	6,800	6,200	8,800	10,600	9,700	56%	9.4%
7	Thanisandra	Bengaluru	3,800	5,800	4,800	5,900	9,000	7,450	55%	9.2%
8	New Gurgaon (sectors 81-95)	NCR	3,900	5,500	4,700	5,700	8,100	6,900	47%	8.0%
9	Guindy - Alandur cluster	Chennai	7,000	8,000	7,500	10,150	11,600	10,900	45%	7.8%
10	Golf Course Extension	NCR	6,800	9,800	8,300	9,700	13,900	11,800	42%	7.3%
11	Puppalguda - Narsingi	Hyderabad	2,600	3,200	2,900	3,700	4,500	4,100	41%	7.2%

Source: Knight Frank Research

Methodology and approach

Selection of the top cities in the country

The top residential destinations have been picked from all the urban centres in the country. During this multi-stage selection, each parameter was chosen in a manner that captures the cause and effect relationship of such parameters with the growth of residential development in the city. The population base of a city is a crucial indicator of the potential of its housing market. In the first stage of selection, the top 100 cities were identified based on their population. The extent of business activity and thrust on infrastructure development are critical factors affecting the housing market, and these selected cities were studied accordingly. Banking penetration, hotel room demand and air passenger traffic were considered as surrogates for business activities, and current and proposed infrastructure expenditures were taken as proxies for infrastructure development. The cities were ranked on these individual parameters, and based on the average ranking, Mumbai, Delhi, Bengaluru, Pune, Chennai and Hyderabad emerged as the top six cities.

With the fundamental prerequisites already in place, these six cities are well prepared to participate in the growth trajectory for the foreseeable future. While a framework was prepared and the top cities identified, our endeavour was even more specific. We have strived to provide a crystal clear view on the investment destinations for a typical investor in a residential property. This objective entailed the identification of residential destinations that would outperform others in terms of price appreciation.

Selection of zones within a city

Regional growth within a city is anything but even, and the direction of such growth is a critical factor in determining the fate of a particular residential property. We, therefore, split each city into 4-5 zones to capture the quantum and direction of such growth. This split is based on the homogeneity of characteristics with respect to access to employment centres, social and physical infrastructure, and demography.

The selection of a preferred zone depends on the perspective of such a selection, which differs depending on the purpose of purchasing property, which is either for end-use or investment. From the growth and investment perspective, zones that have a high concentration of business activity at present and projections of meaningful increments in future will have a comparative advantage over others that have saturated on these factors. The growth of business activity will create abundant employment opportunities, which, in turn, will lead to a rise in inward migration and high demand for residential property in these zones. Hence, we identified the driver industries in each zone and assessed the impact of their business activity on the kind of employment generated by them. We have captured the extent of employment generation by measuring the quantum of occupied office space at present and for the next five years.

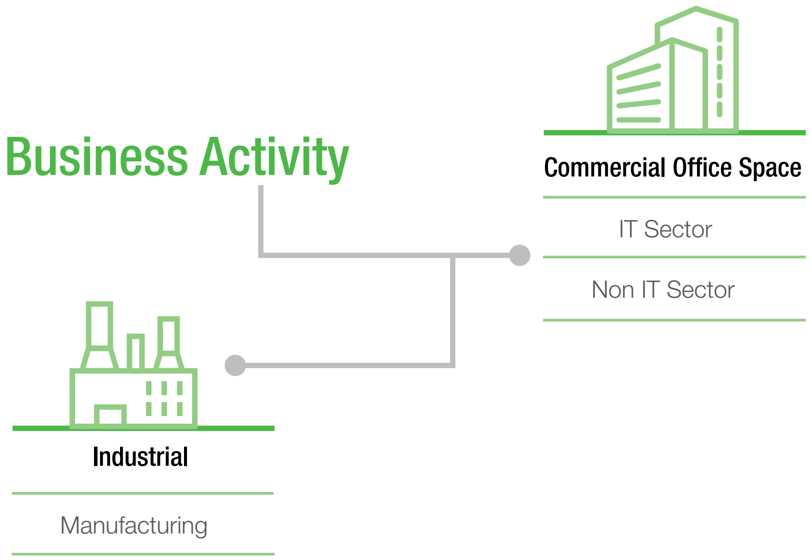
A regression model, capturing the impact of change in revenue of the driver industry on the change in occupied office space, was developed. Revenue projections for the first two years were based on the revenue guidance by the respective industry associations. Projections for the remaining three years were based on the moving average trend of the preceding five years. Also, the upcoming supply of office space in next five years in all the zones was analysed to understand the balance between the incremental employment and upcoming office space. Thus, a crystal clear view on the employment potential in a particular zone has been provided.

The services sector has emerged as a driving force in most cases, with the Information Technology and Information Technology enabled Services (IT/ITeS) industry emerging as a dominant employment driver. Besides the quantum of employment generation in the driver industry, the nature of the jobs in accordance with their position in the value chain in the industry was taken as a differentiating element. For instance, employment in software development within the IT/ITeS industry has a different impact on the income profile of employees, compared to that in a business process outsourcing (BPO) company. This difference in the income profile will impact affordability in a diverse manner.

Besides employment, the other important factor from the growth and investment perspective is infrastructure development. Regional development plans and field visits to the zones equipped us to assess the scope of infrastructure development that will have an impact on residential markets within a zone. We assessed the impact of the existing and upcoming physical infrastructure, such as road, rail and airport projects, on the residential markets of each zone. The presence of social infrastructure, comprising education, healthcare and recreation, was also reviewed.

We selected 1-2 zones with the most promising future on account of the growth in the quantum of occupied office space and incremental infrastructure development. Over the foreseeable future, these preferred zones will be the biggest beneficiaries because they fall in the direction of the movement of employment and infrastructure.

Real Estate Drivers



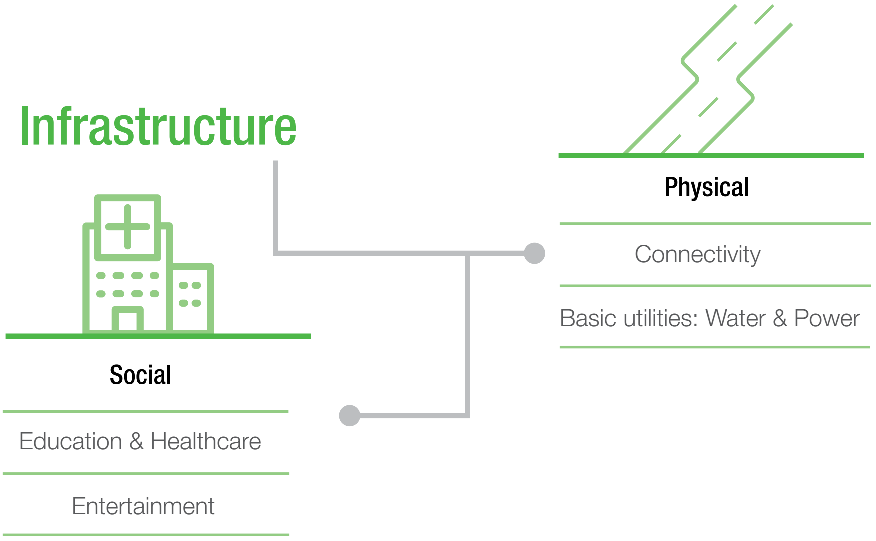
Business Activity

Commercial Office Space

- IT Sector
- Non IT Sector

Industrial

- Manufacturing



Infrastructure

Physical

- Connectivity
- Basic utilities: Water & Power

Social

- Education & Healthcare
- Entertainment

Selection of a destination within a zone

All the residential markets within the preferred zone will benefit on account of the growth in employment opportunities and infrastructure development. However, a few of these will have a comparative advantage over the others. A bottom-up approach was adopted to analyse the existing and proposed connectivity, and social and physical infrastructure facilities. The approach was modelled based on our field visits to each of the residential markets in the preferred zone and discussions with various stakeholders. This primary survey, coupled with our real estate expertise, helped us to arrive at the best destinations from an investment perspective.

The destinations have been analysed vis-à-vis a benchmark location, which is an established residential locality that has attained a relatively higher saturation level in terms of real estate growth and infrastructure development, and is considered to be one of the most sought-after residential markets within the zone. The benchmark location for each destination has been identified based on the nearest price contour. With respect to price forecasting for a destination, a benchmark location, preferably in the same zone, becomes the reference point.

As mentioned earlier, our analytical focus was primarily to understand the state of the subject market's connectivity with important locations, and social and physical infrastructure facilities available currently and in the foreseeable future. However, in certain destinations, there were variations with respect to factors impacting future price movements such as

- **Proximity to premium office markets:** New Airport Road in Viman Nagar, one of the selected destinations in Pune, will benefit due to its connectivity with the premium business district of Kalyani Nagar.
- **Limited land availability:** Limited land availability will limit the scope of new construction and put upward pressure on property prices in destinations such as the Guindy–Alandur cluster in Chennai.
- **Lifestyle change:** Destinations such as Thanisandra in Bengaluru possess the potential to provide a lifestyle shift, which is generally possible in projects developed on large land parcels that facilitate high-rise premium developments with plush amenities.
- **Planned development:** Lack of social infrastructure remains a concern in some destinations at present. However, on account of being in the planned development region, education, healthcare and recreation facilities will eventually come up in destinations such as New Gurgaon in NCR.

While the dynamics of a residential market with respect to the demand-supply scenario were considered to understand its depth, the impact of factors such as the quality of projects on property price was also assessed. It is of paramount importance to assess all these factors in comparison to the benchmark locality and also other localities within the zone. Further, these factors have to be viewed in the context of the prevailing property price. The destinations chosen are definitely ones that would outperform other locations on the investment return scale. However, continuing with our intention of undertaking a threadbare analysis and providing an unequivocal investment view, we have quantified the capital appreciation for investment in these destinations.

As mentioned earlier, to forecast the price movement of a destination, we have considered the price of a benchmark location as the reference point. The assumption is that the destination price will grow at a faster pace (as compared to the benchmark location price) because of its relatively higher level of increasing developmental activities. As a result of this, the current price discount of the destination will reduce, making price convergence imminent in the future.

In the first stage, we have forecasted the price of a benchmark location. Empirical evidence indicates that the price variation of established residential markets is significantly explained by the changes in economic activities. In line with this, we have conducted iterations to identify the explanatory variables that strongly influenced property price movement in the benchmark locations. India's economic growth has been identified as the most significant factor explaining the price movements. Regression equations have been estimated for each of the identified benchmark locations and prices have been forecasted till 2020. In the second stage, the price discount of adestination has been forecasted for the next five years. In order to achieve this, we studied the impact of different factors on the prices of the benchmark location over the last decade. These factors include:

- Incremental employment generation in the zone
- New infrastructure projects
- Reduction in the time taken to commute between the benchmark location and important places in the zone

Our analysis shows that the occurrence of one of the above mentioned factors or a combination of them accelerated the growth of residential property prices in a benchmark location before it stabilised and emerged as a relatively developed market. Assuming that the destination will have a similar impact of incremental employment generation and new infrastructure projects, the property price in the destination has been forecasted by applying an estimated discount factor on the future price movements of the benchmark location.

Risk factors for our outlook

Our forecast for occupied office space relies largely on the service sector led by the IT/ITeS industry. The sector's revenue growth during the next five years will have an impact on the employment, which is one of the biggest drivers of real estate. For the IT/ITeS industry, the revenue growth estimates for the initial two years have been taken from the industry association, and for the remaining three years, they have been taken as the preceding five-year moving average growth rate between 8-10%.

Important terms used in the report

Term	Meaning
Buy	We have recommended buy when the projected price appreciation in a destination is among the highest in the city.
Hold	We have recommended hold when the projected price appreciation in a destination is marginally higher than the city's future weighted average price growth. This recommendation applies only to those investors who had invested in 2012 based on our previous report findings.
Sell	We have recommended sell when the projected price appreciation in a destination is below the city's future weighted average price growth. This recommendation applies only to those investors who had invested in 2012 based on our previous report findings.
Benchmark location	Identified based on the nearest price contour, a benchmark location is an established residential locality that has saturated in terms of real estate growth and infrastructure development, and is considered as the most sought-after residential market within the zone. With respect to price forecasting for the destination, a benchmark location, preferably in the same zone, becomes the reference point.
Destination	The destination is the most promising residential locality from the investment perspective.
Property price contour map	This map splits the geography of a city in accordance with the prevailing residential property price. Residential markets falling within a contour line command the price identified by such a line.
Residential property price	This price indicates the average capital value in the residential market of the destinationand benchmark locations.
Metropolitan region	This is the urban region as defined by the regional development authority.
Zone	A zone is a geographical division of the metropolitan region, comprising several localities that possess similar characteristics in terms of access to employment hubs, connectivity and demography. In most cases, a metropolitan region is divided into 4-5 zones that are labelled as Central, South, North, West and East.

BENGALURU METROPOLITAN REGION

Bengaluru is the third most populous city of India, with a very diverse demography. The Bengaluru urban agglomeration, known as the Bengaluru Metropolitan Region (BMR), comprises Bengaluru urban district, Bengaluru rural district and Ramanagara district.

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Lead Consultant - Research

BENGALURU METROPOLITAN REGION

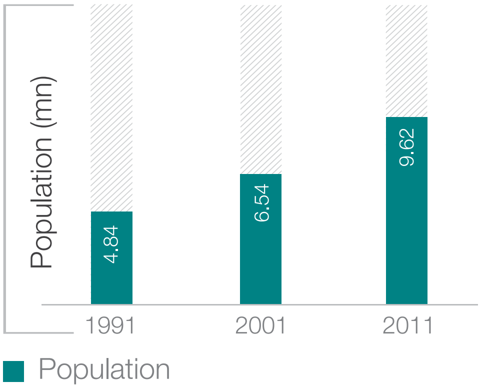
1.
City overview

Introduction

Bengaluru (formerly known as Bangalore) is the capital of the southern state of Karnataka and one of the preferred residential destinations in India. Favourable socioeconomic conditions and a salubrious climate are the prime reasons for the housing sector demand in the city. With the advent of the IT sector in the region in the recent years, Bengaluru soon evolved from being a 'Garden City' to the 'Silicon Valley of India'. Presently, it houses the largest number of Information Technology (IT) and Information Technology Enabled Services (ITeS) companies in the country, as well as numerous public sector companies, including defence, aerospace and biotechnology.

Bengaluru is the third most populous city of India, with a very diverse demography. The Bengaluru urban agglomeration, known as the Bengaluru Metropolitan Region (BMR), comprises Bengaluru urban district, Bengaluru rural district and Ramanagara district. The Bruhat Bengaluru Mahanagara Palike (BBMP) is responsible for the civic administration of the city and is spread over an area of 741 sq km. The Bengaluru Metropolitan Region Development Authority (BMRDA), an autonomous body created by the Government of Karnataka, is the nodal agency looking after the overall development of the BMR. During the last decade (2001-2011), the population growth was observed to have been significant, at an annual rate of 3.9% in the BMR, which can be attributed primarily to the influx of IT/ITeS employees in the city.

Chart 1: Population growth



Source: Census of India

Bengaluru City Map with Price Contours

***Note:** The price contours are indicated in ₹/sq ft*

Source: Knight Frank Research

Bengaluru residential market overview

The Bengaluru residential market is divided into five broad zones: Central, East, West, North and South

Zones	Major residential destinations
Central	M.G. Road, Lavelle Road, Langford Town, Vitthal Mallya Road, Richmond Road
East	Whitefield, Old Airport Road, Old Madras Road, K.R. Puram, Marathahalli
West	Malleswaram, Rajajinagar, Yeshwanthpur, Tumkur Road, Vijayanagar
North	Hebbal, Bellary Road, Hennur, Jakkur, Yelahanka, Banaswadi
South	Koramangala, Sarjapur Road, Jayanagar, J.P. Nagar, HSR Layout, Kanakapura Road, Bannerghatta Road

Central Bengaluru

Central Bengaluru is the commercial and retail heart of the city, with various corporate offices located in micro-markets such as M.G. Road, Vitthal Mallya Road, Commissariat Street and Lavelle Road. Excellent connectivity with various parts of the city and good physical and social infrastructure, along with the presence of organised retail, have ensured the highest property prices in this part of the city. The prominent residential micro-markets in this region include M.G. Road, Langford Road, Richmond Town, Vitthal Mallya Road and Residency Road. The majority of the residential developments in the central locations are bungalows and independent residential units, with a few pockets such as Richmond Road and Sadashivanagar witnessing growth in multi-storey constructions as well.

South Bengaluru

The advent of the IT/ITeS sector into the city had far-reaching effects. It led South Bengaluru, a stronghold of the local populace till the mid-90s, to attain the status of a cosmopolitan region, owing to its popularity with IT sector employees. Electronics City, located on Hosur Road, emerged as the first IT hub of Bengaluru in 1990. Many IT giants, such as Infosys, HCL Technologies, HP, Wipro, Genpact and Siemens, set up their campuses in this region. Electronics City was followed by more employment hubs in the region, such as Bannerghatta Road and Sarjapur Road, each offering considerable office space to IT companies. With the setting up of these companies, South Bengaluru became a sought-after commercial and residential destination. The residential clusters in proximity to the employment hubs, comprising locations such as Sarjapur Road, Koramangala, Jayanagar, Bannerghatta Road and Hosur Road, attracted a large number of expatriates. Besides, social infrastructure, such as the availability of quality hospitals, educational institutions and retail malls, is one of the major reasons for the residential demand in this part of Bengaluru. At present, the region has lost some of its sheen owing to the new office and residential developments towards the eastern and northern parts of the city.

> “The advent of the IT/ITeS sector into the city led South Bengaluru, a stronghold of the local populace till the mid-90s, to attain the status of a cosmopolitan region, owing to its popularity with IT sector employees. The residential clusters in proximity to the employment hubs attracted a large number of expatriates. At present, the region has lost some of its sheen owing to the new office and residential developments towards the eastern and northern parts of the city.”

East Bengaluru

Prior to 1990, East Bengaluru was home to some of the reputed heavy manufacturing industries, such as Hindustan Aeronautics Limited, Bharat Earth Movers Limited and Indian Telephone Industries Limited, which were instrumental in the growth of this region. With the dawn of the IT sector, some of these industries have gradually turned into tech parks. Proximity to the Outer Ring Road (ORR), coupled with the availability of graded office space, attracted major IT/ITeS companies to the eastern zone, fuelling the expansion of commercial and residential development in this region. Consequently, Whitefield, CV Raman Nagar, Old Madras Road, Indiranagar, K.R. Puram, Old Airport Road, Mahadevapura, Hoodi Circle, et al emerged as preferred residential destinations among IT employees, while Whitefield emerged as a prime business district, with a number of tech parks, SEZs, captive campuses and business centres.

North Bengaluru

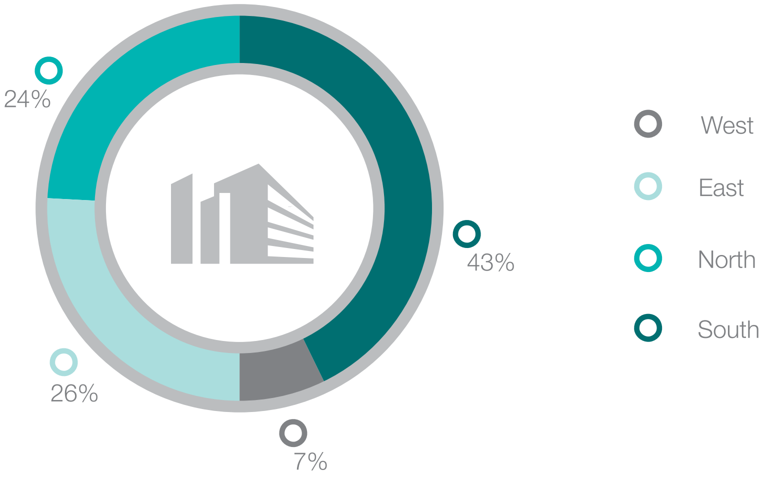
One of the noteworthy developments in recent years has been the emergence of North Bengaluru. With the commencement of the new international airport at Devanahalli in 2008, North Bengaluru became the cynosure of all interested parties, from investors to business houses. Numerous real estate and infrastructure projects were announced to enhance the connectivity between the Bengaluru city centre and the airport. Moreover, to generate employment in this region, the government, in association with private companies, earmarked large investments, such as Karnataka Industrial Areas Development Board Park, Aerotropolis, the Information Technology Investment Region (ITIR) and Devanahalli Business Park. Today, with adequate infrastructure in place, this region is on the cusp of becoming a preferred business district of Bengaluru, presenting immense potential for real estate investment. The major micro-markets in this zone are Hebbal, Thanisandra, Devanahalli, Yelahanka and Hennur.

West Bengaluru

West Bengaluru is recognised primarily as an industrial hub, accounting for the Peenya Industrial Area - one of the largest industrial areas in Asia. There are large setups of several renowned engineering, transformers, motor and generator companies here. Being an industrial hub, this region was not caught in the IT/ITeS wave of the mid-1990s that transformed South and East Bengaluru as some of the most sought-after residential markets. However, of late, this region has been gaining considerable interest with the commencement of several infrastructure projects, such as the elevated expressway along Tumkur Road and the metro rail connectivity. Micro-markets such as Malleswaram, Yeshwantpur, Rajajinagar, Mysore Road, Tumkur Road and Jalahalli West are considered to be key residential locations that have witnessed an impetus in growth.

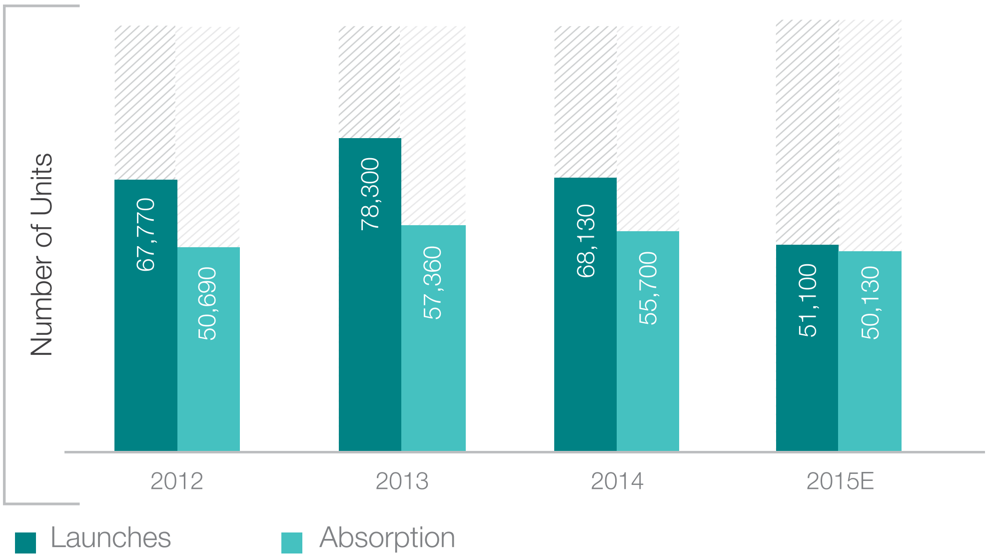
> “One of the noteworthy developments in recent years has been the emergence of North Bengaluru. With the commencement of the new international airport at Devanahalli in 2008 and with adequate infrastructure in place, this region is on the cusp of becoming a preferred business district of Bengaluru, presenting immense potential for real estate investment.”

Chart 2: Zone-wise split of residential underconstruction units



Source: Knight Frank Research

Chart 3: Residential demand-supply trend in Bengaluru



Source: Knight Frank Research

Table 1: Existing infrastructure

Road network	Distance	Observations
Road Network		
Outer Ring Road (ORR)	62 km	The ORR provides connectivity with all the major highways around the city and passes across through the major suburbs, viz. Hebbal-K.R. Puram-Marathahalli-Sarjapur Road-Silk Board Junction
Nandi Infrastructure Corridor Enterprises (NICE) Ring Road	42 km	This long peripheral road connects Jalahalli in the north with Electronics City on Hosur Road in the south. The corridor connects Mumbai and Chennai through NH-4 in the western region and NH-7 in the southern region, respectively. It was initially a four-lane structure, with provisions for expansion up to six lanes. NICE Ring Road has enabled traffic from Mumbai to move directly to Chennai without crossing downtown Bengaluru
Hosur Road (NH-7)	40 km	This is a four to eight-lane national highway (part of NH-7) connecting Bengaluru city with Hosur, a town in Tamil Nadu. Hosur Road passes via Electronics City, one of the largest IT industrial parks of Bengaluru
Hosur Road Elevated Toll-way	10 km	This is a 10-km-long, elevated and tolled expressway connecting Central Silk Board junction to Electronics City
Road widening from Hebbal to Bengaluru International Airport	20 km	A six-lane elevated road over the existing road connects Hebbal with the international airport. The elevated stretch that starts from Kodigehalli Gate extends over 3.72 km. The project has a series of seven flyovers from Hebbal to Trumpet Junction, near the airport
Tumkur Road Elevated Toll-way	19.5 km	The stretch of 19.5 km, combining the 4.5-km elevated expressway and access-controlled road on NH-4, has benefited commuters heading towards North Karnataka and further to Pune and Mumbai, as well as other parts of North India each day. It connects Yeshwanthpur to Nelamangala seamlessly

Source: Knight Frank Research

Table 2: Existing metro network

Metro network	Distance	Observations
Metro Network		
Phase I, Reach I	6.7 km	Reach I, a 6.7-km part of the East–West corridor connecting Byappanahaalli with M.G. Road, has been operational since October 2011
Phase I, Reach 3/3A	9.9 km	The 10-station stretch of the Green Line has been operational since March 2014. It connects Sampige Road to Peenya Industry
Phase I, Reach 3B	2.5 km	The three-station stretch of the Green Line, operating between Peenya Industry and Nagasandra, commenced in May 2015

Source: Knight Frank Research

Table 3: Upcoming infrastructure

Connectivity	Length	Observations	Current status	Expected completion
Infrastructure				
Peripheral Ring Road (PRR)	116 km	The proposed 116-km PRR, when completed, will connect the entire peripheral arterial road, linking all the major highways and district roads. The major connecting area would be Hosur Road to Tumkur Road via K.R. Puram, Bellary Road, Old Madras Road and Sarjapur Road. The PRR is expected to ease the congestion on the ORR	Land acquisitions	Post 2020
Bengaluru Metro Rail Phase I	42 km	The 24-km North–South (NS) metro corridor has been scheduled to connect the Hessarghatta circle (in the north) with Puttenahalli (in the south). Another 18-km East–West (EW) metro corridor will connect Byappanahalli with Mysore Road	Under construction	2017
Elevated corridor from Central Silk Board Junction to Jayamahal Road	15 km	This 15-km elevated corridor, connecting Central Silk Board Junction to Jayamahal Road, is envisaged to ease the traffic flow between north and south Bengaluru. This will also facilitate in reaching the new international airport in the north	Pre-feasibility stage	Post 2017

Source: Knight Frank Research

Table 3: Upcoming infrastructure

Connectivity	Length	Observations	Current status	Expected completion
Bengaluru Metro Rail Phase 2	72 km	a) Phase II envisages the extension of Metro Phase I on the NS corridor. To the north, it will be extended up to Bengaluru International Exhibition Centre (BIEC), and to the south, it will be extended up to NICE Junction b) The EW corridor is planned to be extended up to Whitefield to the east and Kengeri to the west c) Further, two new lines have been planned in Phase II - one connecting Rashtreeya Vidyalaya (RV) Road with Bommasandra in the South, and the other connecting Electronics City on Hosur Road with the city centre d) Another line will run parallel to the NS corridor of Phase I, between Nagawara in the north and Gottigere in the south. It will have two interchange stations - one at M.G. Road and the other at Jayadeva hospital	In-principle approval received from the Govt. of Karnataka. Awaiting approval from the Urban Development Department Ministry	2017 - 2021
Bengaluru Metro Rail Phase 2A	30 km	As per the instructions of the state government, RITES is examining two alignments from Nagawara to the international airport as part of Phase 2A: 1. Via Thanisandra, Begur, and 2. Via the national highway – Hebbal, Yelahanka	Pre-feasibility stage	Post 2019
Construction of an elevated corridor between Jnanbharathi and Old Airport Road	28 km	This is a proposed 28-km West-East elevated corridor along the Ring Road connecting Tumkur (Jnanbharathi) with Old Airport Road. The corridor will pass through Sirsi Circle, Town Hall, Hudson Circle, Vellara junction and Old Airport Road. The proposed corridor is expected to ease the East-West city traffic flow	Pre-feasibility stage	Post 2017
Bengaluru - Mysore Infrastructure Corridor (BMIC)	140 km	A six-lane expressway connecting Bengaluru with Mysore is under construction. Only the peripheral part of 56 km has been completed till date	Land acquisitions	2018 - 2021
Suburban Railway	440 km	RITES has proposed a commuter rail service using the existing railway lines covering 440 km across seven districts. This will connect Bengaluru's suburbs in all directions	Formal proposal sent to the railway board	2019 - 2021

Source: Knight Frank Research

Bengaluru Metro Network (Phase I and II)

Source: Knight Frank Research

2.

Top investment destinations

What will drive Bengaluru's residential real estate market?

The fundamental economics of real estate maintain that price appreciation is dependent on two factors - employment generation and infrastructure development (connectivity). On the employment front, Bengaluru enjoys the epithet of being the IT and biotechnology capital of India. It also houses numerous government-promoted heavy industries, including defence organisations, scientific establishments, and aerospace and telecommunication companies. Besides, several renowned educational institutions are located here, offering a plethora of job opportunities. Of late, the city has witnessed substantial interest from the ecommerce sector as well, translating into significant potential for its real estate. However, the Bengaluru's primary economic driver remains the IT/ITeS sector. Prominent Fortune 500 companies operational in Bengaluru include IBM, Dell, CISCO, Microsoft, Tesco, Citigroup, Goldman Sachs and Bosch. Prominent Indian IT and ITeS companies, such as TCS, Infosys and Wipro, also have major operations in the city.

Going forward, the IT/ITeS sector will continue to dominate the office space landscape in Bengaluru, although its share may decrease slightly owing to the growth of other sectors such as ecommerce. Factors such as relatively affordable office rents, the availability of a talent pool, favourable state government policies and a conducive business environment will continue to attract IT/ITeS sector occupiers to the city.

Which regions in Bengaluru will dominate the real estate landscape?

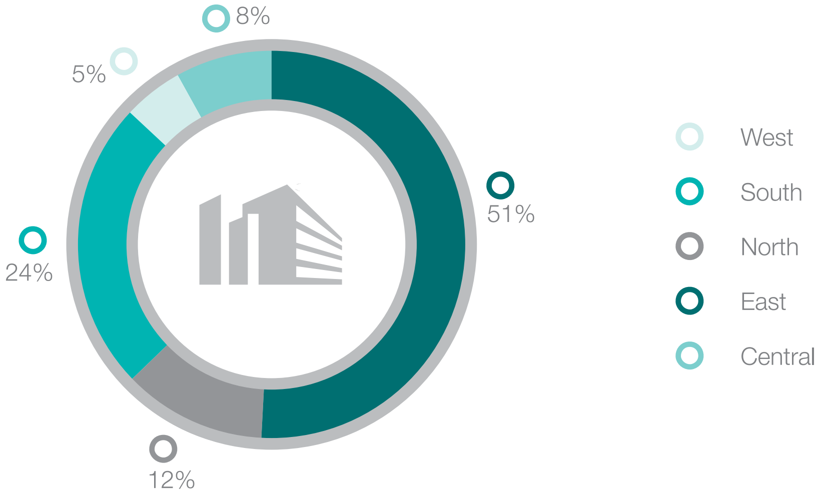
Bengaluru's office market comprises two major zones-east and south-with the north gradually emerging on the horizon. Currently, around 75% of the city's office space stock (Chart 4) is distributed in the eastern and southern zones. Given the strong preference of occupiers for the East zone, which consists primarily of the office markets of Whitefield and the eastern pockets of the ORR, we foresee occupier interest to sustain over the next five years as well. Factors such as connectivity to the international airport, relatively lower rentals, existing tenant profile, proximity to a talent pool and residential markets will ensure a steady absorption in the coming five years.

Meanwhile, Electronics City-the key IT hub in the south-has been losing its hold over office space absorption, owing mainly to the lack of premium residential developments, large retail projects, entertainment avenues and social infrastructure, as well as its distance from the airport. However, the southeastern part of the zone, comprising the Sarjapur Road ORR, has been witnessing large-scale absorption due to the inherent advantages of connectivity, and proximity to talent pools and residential locations. Thus, the chunk of the ORR region towards the south is expected to maintain its attractiveness in the forthcoming five years.

The northern zone is expected to come up as an important employment centre, chiefly due to the dipping vacancy levels in the prime office markets in the city. The existing major employment driver in this region is the IT/ITeS sector. In the future, the incremental employment in this region will be generated from planned commercial developments such as ITIR, KIADB Park, Devanahalli Business Park and Aerotropolis. Moreover, several commercial projects-both standalone and in integrated townships-are scheduled to become operational in the next 2–3 years and will cater to the IT/ITeS sector demand.

This implies that more than 85% of the city's white-collar workforce will have to travel or be located either in East, Southeast (Sarjapur ORR) or North Bengaluru, overlooking the office markets in South (mainly Electronics City) and West Bengaluru.

Chart 4: Zonal split of office space

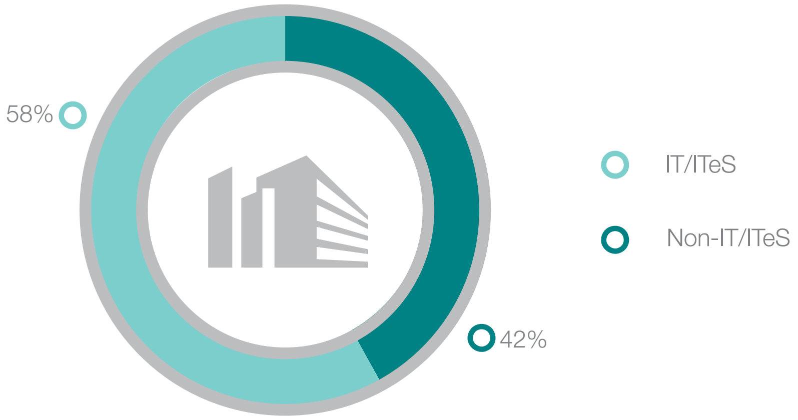


Campus developments have not been included in South Bengaluru

Source: Knight Frank Research

> The IT/ITeS sector will continue to dominate the office space landscape in Bengaluru, although its share may decrease slightly owing to the growth of other sectors such as ecommerce. While the eastern and south-eastern part of the city will continue to attract office demand, the northern zone is expected to come up as an important employment centre, chiefly due to the dipping vacancy levels in the prime office markets in the city.

Chart 5: Sector-wise office space breakup



Campus developments have not been included in South Bengaluru

Source: Knight Frank Research

Bengaluru presently faces a dearth of an effective transport system that would connect residents with their respective employment hubs effortlessly, within a minimum span of time. While the three major elevated roadways-Hosur Road, Tumkur Road and the Hebbal-Yelahanka stretch-have aided this cause to some extent, two major infrastructure projects-the ORR and the existing stretch of the metro rail-have fallen short of keeping pace with the growth of the city. The ORR, which was conceptualised to effectively decongest and connect the city seamlessly, has become severely clogged. Phase 1 of the metro rail, operational in a few stretches, has still not made headway into the more populated areas of the city. The completion of the metro rail and the ambitious Peripheral Ring Road (PRR) projects are still a long way from become a reality and are not expected to be operational before 2020. Hence, a large section of the workforce would continue to depend on their own vehicles or employer-provided transportation to reach their workplaces.

The heavy dependence of Bengaluru's working population on the roads for their daily commute has caused homebuyers

> Waning interest in the southern IT hub of Electronics City and the continuous onslaught of residential launches in the region y-o-y has led South Bengaluru to face a supply glut, with a large chunk of unsold inventory. Besides, the rate of appreciation in prime southern locations is expected to slacken, having already attained high prices, coupled with a significant inventory overhang.

to stay in the vicinity of their workplace. This had been one of the prime factors behind the fast-paced growth of the residential markets in South and East Bengaluru rather than the rest of the city. However, with the large quantum of office space coming up towards North Bengaluru, along with the region's physical and social infrastructure development, we foresee these dynamics changing in the coming five years, and expect that while the demand for new residential projects will continue to remain strong in the East, North Bengaluru will gradually outpace South Bengaluru in the residential absorption trend.

Why will residential prices in South and West Bengaluru grow at a slower rate compared to East and North ?

South Bengaluru has typically been the most preferred residential destinations of the city by the local populace and expatriates alike. This region is favoured by IT sector employees, largely due to the presence of a large number of IT companies in the neighbourhood and strong social infrastructure development. Today, the region suffers from severe traffic congestion at most junctures. Besides the waning interest in the southern IT hub of Electronics City, the continuous onslaught of residential launches in the region y-o-y has led South Bengaluru to face a supply glut, with a large chunk of unsold inventory.

Weighted average prices in key investor-driven markets, such as Kanakapura Road, Sarjapur Road and Haralur Road, which account for a large number of newly-launched properties, have already escalated and are quoted within a range of ₹5,500 - 6,000 per sq ft. Prices in Kanakapura Road had risen significantly with the commencement of the NICE Ring Road and the development of the metro rail node, which is expected to be operational in early 2016. The rate of appreciation in these prime locations is expected to slacken, having already attained high prices, coupled with a significant inventory overhang. While Kanakapura Road does not have any incremental employment opportunities, Sarjapur Road and Haralur Road do not have any incremental infrastructure coming up in the next five years, thus negating their viability as top investment destinations. On the other hand, distant peripheral locations beyond Electronics City, such as Chandapura Junction and Anekal, have a slew of affordable housing underway, but the distance factor and the dearth of adequate social infrastructure mar their investment potential opportunity in the next five years.

In the past, West Bengaluru had lost out to the other zones in the city, as it was perceived as an industrial hub, with Peenya Industrial Area hosting large setups of engineering, motors and generator companies. However, its residential market gained interest in recent years, with the announcement of the metro rail and the development of the four-lane elevated Tumkur Road. Today, the metro rail is operational and runs from Sampige Road to Nagasandra. Early 2016 will see another stretch becoming operational towards Mysore Road.

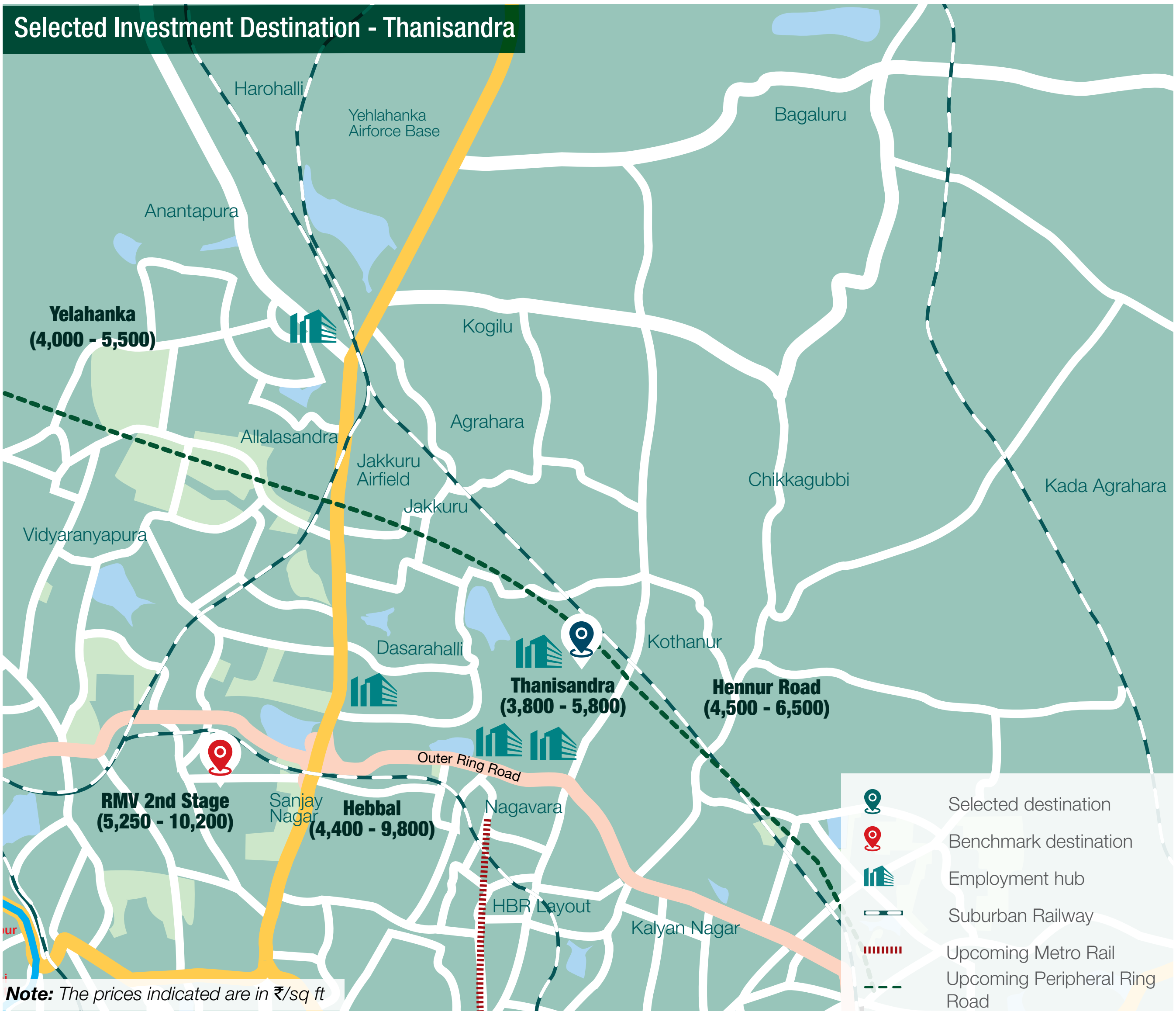
Of late, residential projects launched in locations such as Malleswaram, Rajajinagar and Yeshwanthpur have garnered good traction. However, most of these projects quote fairly high prices, in the range of ₹6,000 -14,000 per sq ft, thereby breaching the affordability factor for the majority of the working populace in the region. Among other western micro-markets, distant locations on Mysore Road, particularly Kumbalgodu, hold some potential due to the upcoming metro rail connectivity. But the region will require a larger quantum of incremental employment opportunities and more social infrastructure in place before it can be considered an investment destination in the five - year horizon. Besides, there is sufficient availability of land on Mysore Road with the potential to develop into residential markets. Since incremental supply would occur at lower prices further down the stretch, price appreciation will be somewhat muted along Mysore Road over the coming five years, thereby leading to its negation on the investment front.

Selected investment destinations

Investment destination 1: Thanisandra

Thanisandra, located in North Bengaluru, is one of the two top investment destinations in the city. This can be attributed largely to its competitive residential pricing as compared to the benchmark location, access to employment opportunities, and physical and social infrastructure

Selected Investment Destination - Thanisandra



Note: *The prices indicated are in ₹/sq ft*

Source: Knight Frank Research

What are the demand drivers in Thanisandra?

The primary residential demand drivers in Thanisandra, which would aid in fuelling investment plans, are its proximity to employment hubs and infrastructure development. Table 4 enumerates the region’s connectivity to places of importance.

> The primary residential demand drivers in Thanisandra, which would aid in fuelling investment plans, are its proximity to employment hubs and infrastructure development. The region has easy access to social infrastructure, and all the major retail, entertainment, medical and educational hubs are in the range of 3-12 km while employment hubs are within 10-20 minutes’ drive.

Table 4: Connectivity from Thanisandra

Access to	**Thanisandra**	
	Distance (Km)	**Travel time by road (min)**
Bechmark locations		
RMV 2nd Stage	9 - 11	19 - 21
Employment hubs		
Embassy Manyata Business Park, Nagawara	3 - 4	10 - 12
Kirloskar IT Park, Hebbal	7 - 8	15 - 18
Brigade Magnum (under construction), Hebbal	6 - 7	17 - 18
Karle IT SEZ (under construction), Nagawara	3 - 4	10 - 12
Ecopolis IT SEZ (under construction), Yelahanka	12 - 13	20 - 22
BCIT Park (1st block), Thanisandra	0	0
Transportation hubs		
International Airport, Devanahalli	28 - 30	40 - 43
Hebbal railway station	9 - 11	19 - 21
Retail hubs		
Esteem Mall, Hebbal	6 - 7	12 - 15
Elements Mall, Thanisandra	0	0
Galleria Mall (under construction), Yelahanka	9 - 10	21 - 25

Source: Knight Frank Research

Table 4: Connectivity from Thanisandra

Access to	**Thanisandra**	
	Distance (Km)	**Travel time by road (min)**
Hospitals and educational institutes		
Columbia Asia Multispecialty Hospital, Hebbal	7 - 8	15 - 18
Motherhood Hospital, Sahakar Nagar	8 - 9	19 - 23
Bangalore Baptist Hospital, Hebbal	7 - 8	15 - 20
Vidyashilp Academy, Jakkur	6 - 7	14 - 17
Vidya Niketan Academy, Hebbal	7 - 8	15 - 18
Rashtrotthana Vidya Kendra, Thanisandra	0	0
HKBK College of Engineering, Nagawara	4 - 5	15 - 18
Presidency College, Hebbal	6 - 8	18 - 20

*(**Note:** Thanisandra is considered the place of origin)*

Source: Knight Frank Research

> “In terms of infrastructure, Thanisandra enjoys a strategic location advantage, located just off the ORR and lying in proximity to Hebbal. The region will also benefit from Nagawara being a metro rail node that will connect to Gottigere in the south as part of the North-South corridor plans.”

It is evident that Thanisandra lies in the vicinity of most key locations and institutions. The region has easy access to social infrastructure, and all the major retail, entertainment, medical and educational hubs (Table 4) are in the range of 3-12 km, reachable within 10-25 minutes. The airport and railway station are also in proximity to Thanisandra. This emphasises the habitable conditions of the location, thereby increasing its attractiveness.

In terms of employment, locations such as Hebbal, Nagawara and Yelahanka together have an office space stock of more than 14 mn sq ft, out of which Embassy Manyata Business Park, located at Nagawara, accounts for almost 12 mn sq ft of built-up area Furthermore, over the next two years, approximately 7 mn sq ft of incremental office space will become operational in these office hubs. Considering that a million square feet of office space translates into a workforce of about 11,000 - 12,500 employees, this presents an opportunity for incremental employment of over 80,000 people in different shifts. Since Thanisandra will be a 10-20 minute drive from these employment hubs, homebuyers are likely to prefer residing there.

In terms of infrastructure, Thanisandra enjoys a strategic location advantage, located just off the ORR and lying in proximity to Hebbal. The six-lane elevated road from Hebbal to the international airport (Table 1) is in operation since January 2014. The elevated road also connects Yelahanka seamlessly. In a recent development, Thanisandra Main Road was widened to 100 feet to ease more traffic and aid commercial growth. The region will also benefit from Nagawara being a metro rail node that will connect to Gottigere in the south (Table 3) as part of the North-South corridor plans. Going forward, plans are also afoot in Phase 2A of the metro rail to connect Nagawara to the international airport (Table 3), via either Thanisandra or Hebbal-Yelahanka. The PRR project

> RMV 2nd Stage, which is a 20-minute drive from Thanisandra, is considered to be a matured residential market in North Bengaluru. Easy access to the city centre via Bellary Road, well established social infrastructure and limited availability of vacant land for real estate development make this market a premium residential destination. Hence, for the purpose of this report, we have considered RMV 2nd Stage as the benchmark location for North Bengaluru.

(Table 3) is also expected to pass through Thanisandra, thereby connecting it seamlessly with other parts of the city. However, with the North-South corridor metro project (Phase 2) still at a nascent stage and the commencement period of the PRR project in limbo, we do not foresee them starting operations before 2020. Not withstanding the uncertainty over the completion period of these upcoming infrastructure projects, they will eventually help Thanisandra in terms of connectivity.

Considering all these factors, we believe that the demand for residential projects will continue to remain strong in Thanisandra in the coming years.

How much price appreciation do we expect?

RMV 2nd Stage, which is a 20-minute drive from Thanisandra, is considered to be a matured residential market in North Bengaluru. Easy access to the city centre via Bellary Road, well established social infrastructure and limited availability of vacant land for real estate development make this market a premium residential destination. Hence, for the purpose of this report, we have considered RMV 2nd Stage as the benchmark location for North Bengaluru. The current prices in RMV 2nd Stage are in the range of ₹5,200-10,200 per sq ft, and will continue to attract homebuyers in the premium segment. However, as the prevailing prices are relatively unaffordable for the working population in the nearby employment hubs, the upward potential in prices will be muted, going forward. We expect prices in RMV 2nd Stage to increase by 25%, or less than 5% per annum, from the average of ₹7,700 per sq ft in 2015 to ₹9,700 per sq ft by 2020 (Table 5).

On the other hand, prices in Thanisandra will grow at a much faster pace, with strong demand from incremental employment resulting from significant new office completions exerting an upward pressure on prices. Also, with the neighbouring residential micro-markets of Hebbal and Hennur Road, which lie parallel to Thanisandra on either side, quoting average prices of ₹7,000 per sq ft and ₹5,500 per sq ft respectively, buyers are likely to prefer Thanisandra, owing to its lower price, at ₹4,800 per sq ft. The work commencing on the North-South corridor of the metro rail network and the PRR project will also boost residential property demand during our forecast horizon. We expect prices in Thanisandra to appreciate by 55% from 2015 to 2020. The existing discount between RMV 2nd Stage and Thanisandra will thus come down from 38% to 23% by 2020, translating into a price increase from ₹4,800 per sq ft to ₹7,450 per sq ft during the same period (Table 5).

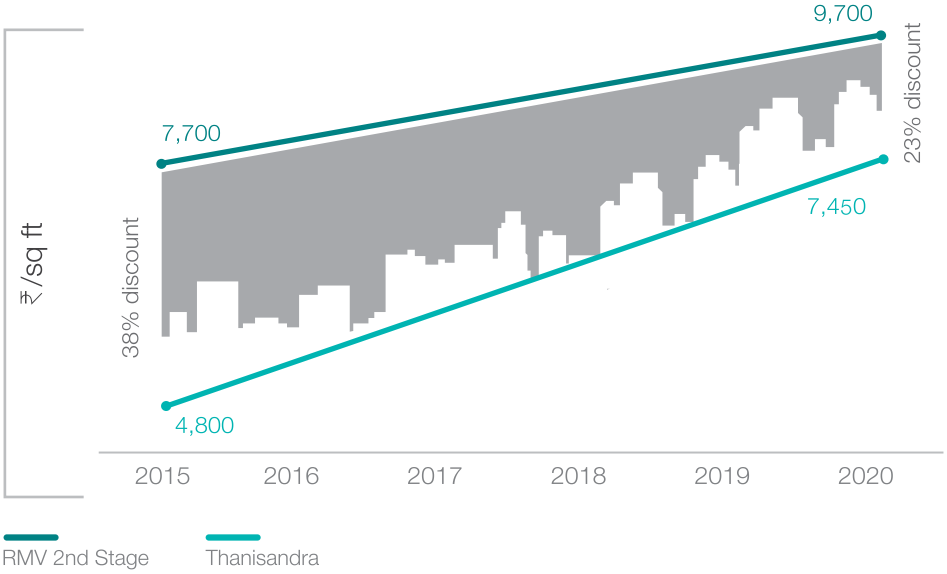
Table 5: Price movement in the benchmark location and investment destination - Thanisandra

	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020	CAGR	2015	2020E
RMV 2nd Stage	5,200	10,200	7,700	6,650	12,750	9,700	25%	4.7%		
Thanisandra	3,800	5,800	4,800	5,900	9,000	7,450	55%	9.2%	38%	23%

(***Note:*** *The price growth and discount from 2015 to 2020 is calculated on the average price of that location)*

Source: Knight Frank Research

Chart 6: Price movement in Thanisandra

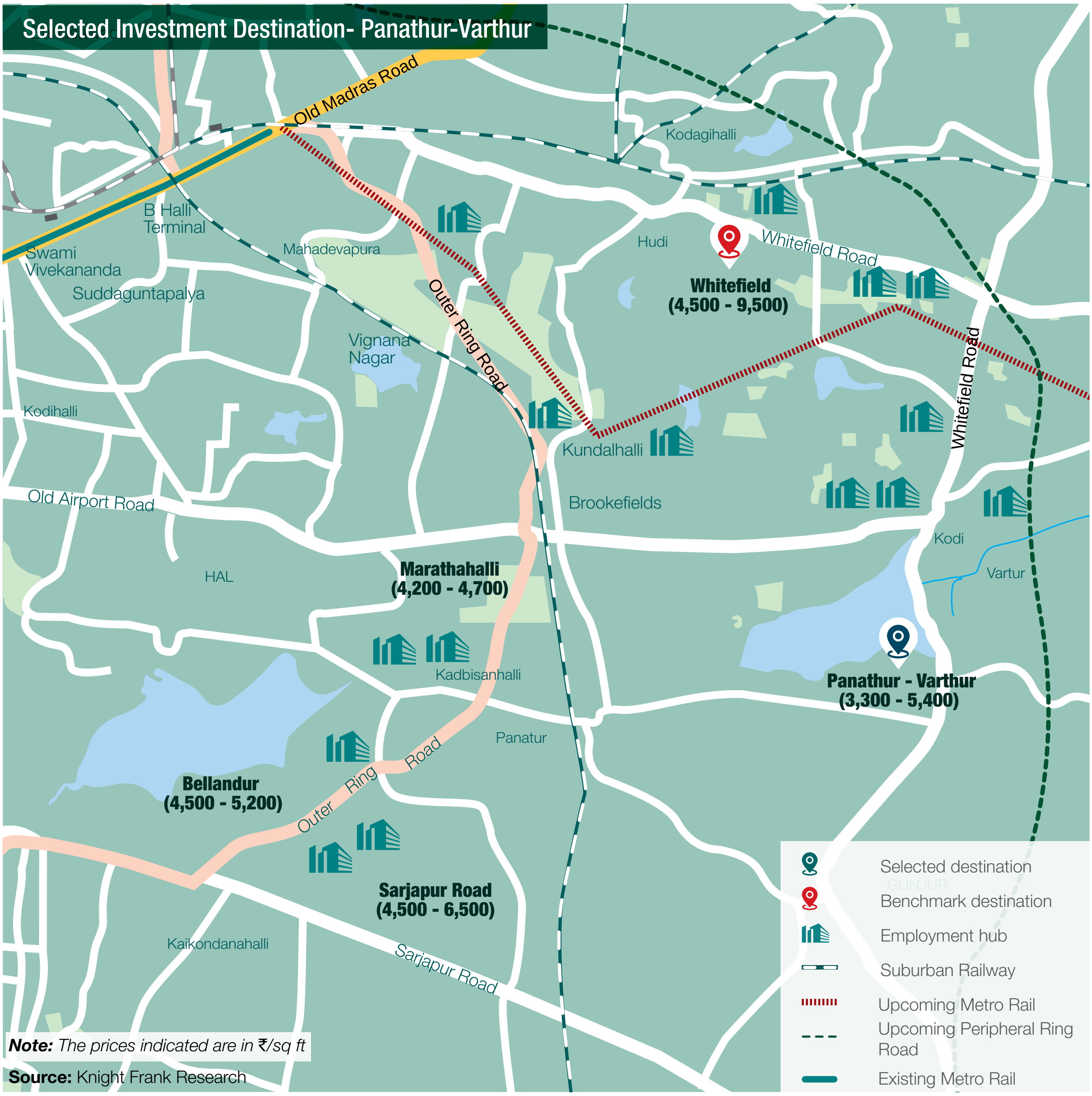


Source: Knight Frank Research

> Thanisandra will grow at a much faster pace than RMV 2nd Stage, with strong demand from incremental employment resulting from significant new office completions exerting an upward pressure on prices. Also, the work commencing on the North-South corridor of the metro rail network and the PRR project will boost residential property demand during our forecast horizon.

Investment destination 2: Panathur-Varthur belt

The eastern belt of Panathur-Varthur is another top investment destination in the city. The area is accessible through both, the Marathahalli ORR and Whitefield (via Varthur Kodi), thus benefitting from both the micro-markets.


Selected Investment Destination- Panathur-Varthur

Note: *The prices indicated are in ₹/sq ft*

Source: Knight Frank Research

What are the demand drivers in Panathur-Varthur belt?

The primary residential demand drivers in Panathur-Varthur belt are its proximity to key employment hubs of the city and access to good social infrastructure. Table 6 enumerates the region's connectivity to places of importance.

Table 6: Connectivity from Panathur-Varthur belt

Access to	Panathur-Varthur belt	
	Distance (Km)	Travel time by road (min)
Bechmark locations		
Whitefield	8 - 10	18 - 21
Employment hubs		
International Tech Park (ITPB), Whitefield	10 - 12	25 - 30
Prestige Ozone, Whitefield	8 - 10	18 - 21
HUL Research Centre, Whitefield	8 - 10	18 - 21
RMZ Ecoworld, ORR	4 - 5	10 - 12
Cessna Business Park, ORR	2 - 3	8 - 10
Pritech IT Park, ORR	4 - 5	10 - 12
Embassy Tech Village, ORR	2 - 3	6 - 8
Transportation hubs		
International Airport, Devanahalli	49 - 51	70 - 75
Whitefield railway station	13 - 15	25 - 30
Retail hubs		
Forum Value Mall, Whitefield	8 - 10	16 - 20
Inorbit Mall, Whitefield	10 - 12	25 - 30
Soul Space Arena Mall, ORR	6 - 8	11 - 15
Hospitals and Educational Institutes		
Columbia Asia Multispecialty Hospital, Whitefield	8 - 10	16 - 20
Apollo Cradle, Brookefield	7 - 8	18 - 20
Sakra World Hospital, ORR	3 - 5	10 - 12
Ryan International School, Whitefield	7 - 9	20 - 25
Greenwood High School, Gunjur	7 - 9	15 - 18
Vibgyor High School, Marathahalli	7 - 9	20 - 25
New Horizon College of Engineering, ORR	2 - 4	5 - 10
Vydehi Institute of Medical Sciences, Whitefield	10 - 12	25 - 30

(***Note:*** *Panathur is considered as the place of origin. Distances from Varthur to Whitefield will be lesser than given in the table.)*

Source: Knight Frank Research

> “Panathur-Varthur region enjoys proximity to several key locations and institutions, both in Whitefield and along the stretch of the ORR. On the employment front, with Whitefield and the ORR being major IT hubs, Panathur-Varthur will witness substantial demand from homebuyers, as it will be just a 10-20 minute drive from these employment hubs.”

> Prices in the Panathur-Varthur belt will escalate at a faster pace than its benchmark location Whitefield, which could be attributed largely to the incremental employment, owing to new office completions in the ORR office markets and in Whitefield. This will result in the existing discount between Whitefield and Panathur-Varthur region to narrow down from 38% to 23% by 2020.

Table 6 emphasises the fact that Panathur-Varthur region enjoys proximity to several key locations and institutions, both in Whitefield and along the stretch of the ORR. The region is connected to major retail, entertainment, medical and educational hubs (Table 6), all within the range of 2-15 km, and reachable within 5-30 minutes. While the international airport lies at a distance of 50 km from Panathur (more than an hour away), the railway station is closer, in Whitefield, 14 km away. The proximity to various social and physical infrastructure projects depicts the liveable state of affairs of Panathur-Varthur belt, emphasising its attractiveness.

On the employment front, Whitefield and the ORR, being major IT hubs, account for a whopping 24.6 mn sq ft and 28.4 mn sq ft of office space stock, respectively. Taking the thumb rule of a million square feet of office space translating into a workforce of about 11,000 - 12,500 employees, the present office stock of Whitefield and the ORR would signify employment for over 275,000 and 320,000 people respectively in various work shifts. Over the next two years, approximately 7.6 mn sq ft of incremental office space will become operational in these office hubs, translating into an additional 90,000 employees. Thus, Panathur-Varthur will witness substantial demand from homebuyers, as it will be just a 10-20 minute drive from these employment hubs.

The Panathur-Varthur region enjoys strategic advantage location-wise - while Panathur is located just off the ORR, which is one of the major infrastructure projects of Bengaluru in recent times,Varthur is just off Whitefield one of the key employment centres of the city. The ORR enables easy access to the northern and southern regions of the city. The metro rail will soon be extended from Baiyyappanahalli to Whitefield (Table 3), work having commenced in 2015. Kundahalli will be the nearest metro node from Panathur, at a distance of 7.5 km and reachable in 17 minutes. Once the entire East-West corridor of the metro is completed, Panathur-Varthur belt will gain access to the western part of the city as well. Besides, the first phase of the PRR project is expected to cut through Varthur Road, starting from Sarjapur Road and ending at Tumkur Road. However, with the Baiyyappanahalli-Whitefield metro project still a long way to go and uncertainty prevailing over the status of the PRR project, we do not foresee them starting operations before 2020. Nevertheless, these infrastructure projects, when completed, will aid Panathur-Varthur region effectively in terms of connectivity.

Considering all these factors, we believe that the demand for residential projects will gain further momentum in Panathur-Varthur in the coming years.

How much price appreciation do we expect?

Whitefield, which is at a drivable distance of around 18 minutes from Panathur and adjacent to Varthur Road, is considered to be a matured residential market in East Bengaluru. An established employment hub, good connectivity to the city centre via the Old Airport Road and well developed social infrastructure make this market a premium residential destination. Thus, for the purpose of this report, we have considered Whitefield as the benchmark location for East Bengaluru. This denotes that residential prices in most locations in East Bengaluru will be guided by this market in the coming years. The current prices in Whitefield are in the range of ₹4,500 - 9,500 per sq ft, and it will continue to be a preferred residential destination. However, with most of the residential projects quoting prices in the upper band, the upward potential in prices are expected to slacken, going forward. We expect prices in Whitefield to increase by 30%, or approximately 5.4% per annum, from the average of ₹7,000 per sq ft in 2015 to ₹9,100 per sq ft by 2020 (Table 7).

Meanwhile, prices in Panathur-Varthur belt will escalate at a faster pace than Whitefield, which could be attributed largely to the incremental employment, owing to new office completions in the ORR office markets and in Whitefield. This will create a latent demand for housing in the residential localities that are in proximity to these employment hubs. With the neighbouring residential micro-markets of Marathahalli, Bellandur and Sarjapur Road quoting prices in the range of ₹4,500 - 5,500 per sq ft respectively, buyers are expected to favour Panathur-Varthur region owing to its lower price of ₹4,350 per sq ft. The commencement of the East-West metro rail corridor work and the PRR project work will also boost the residential property demand during our forecast horizon. We expect prices in Panathur-Varthur belt to appreciate by 61% from 2015 to 2020. This will result in the existing discount between Whitefield and Panathur-Varthur region to narrow down from 38% to 23% by 2020, translating in to a price increase from ₹4,350 per sq ft to ₹7,000 per sq ft during the same period (Chart 7).

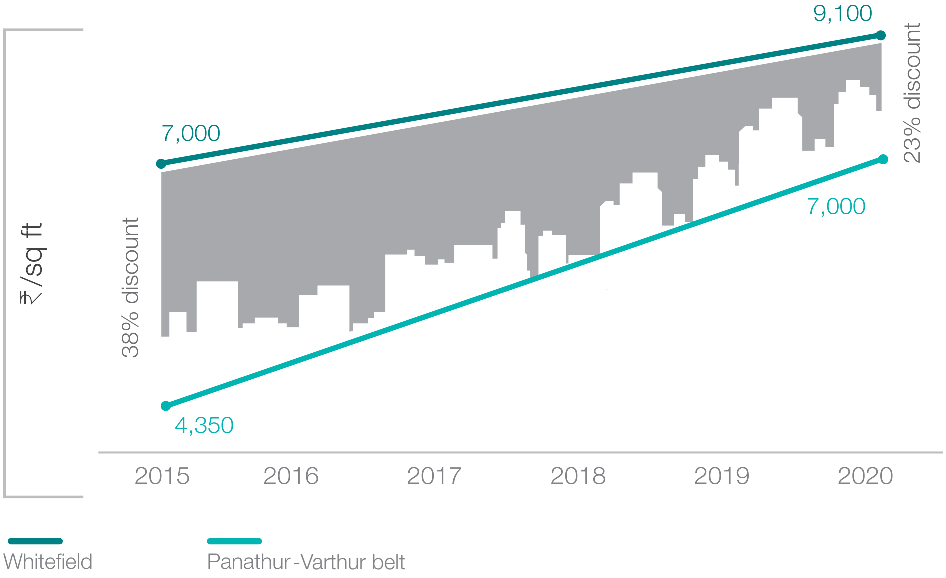
Table 7: Price movement in benchmark location and investment destination - Panathur-Varthur belt

	2015 (Prices in ₹/sq ft)			2020E (Prices in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020	CAGR	2015	2020E
Whitefield	4,500	9,500	7,000	5,850	12,350	9,100	30%	5.4%		
Panathur-Varthur	3,300	5,400	4,350	5,300	8,700	7,000	61%	10%	38%	23%

(***Note:*** *The price growth and discount from 2015 to 2020 is calculated on the average price of that location)*

Source: Knight Frank Research

Chart 7: Price movement in Panathur-Varthur belt



Source: Knight Frank Research

Is there any precedence to such a trend?

Sarjapur Road, located towards South Bengaluru, was in a similar situation in 2010 as Thanisandra and Panathur-Varthur region today. In 2010, prices in Sarjapur Road were at ₹3,600 per sq ft. Koramangala, which was considered the benchmark location for Sarjapur Road back then, was quoting an average price of ₹7,250 per sq ft. Easy access from Sarjapur Road to other parts of the city through the ORR and the presence of various IT/ITeS offices along the ORR resulted in the price discount between these two markets to narrow down over a five-year period. Since 2010, the discount between these markets has come down from 50% to 34%. Currently, while average prices in Koramangala are at ₹8,750 per sq ft, prices in Sarjapur Road are 34% lower, at ₹5,750 per sq ft. We believe Thanisandra and Panathur-Varthur belt will follow a similar pattern in the coming five years.

3.
Review of the previously-recommended investment destinations

The previously recommended investment destinations in Bengaluru witnessed mixed trends on the performance front till 2015. In 2012, we had projected a five-year price growth for Hebbal and K.R.Puram, in the range of 91% to 94%. While prices increased by 67% in Hebbal in the first three years of our projected time horizon, surpassing our initial estimates, K.R.Puram saw prices increase only by 33% during the same period, thereby falling short of our estimates.

Hebbal saw prices rise substantially, owing to the infrastructure development in the region. The location of the international airport at Devanahalli and the six-lane elevated corridor linking Hebbal to the airport,enabling enhanced connectivity, boosted the region's investment potential. Hebbal also lies in proximity to Embassy Manyata Business Park, one of the largest operational IT parks in the city. These factors led to the launch of a number of high-end residential projects in the region. However, with prices exceeding ₹7,000 per sqft in 2015, the average annual growth rates are expected to be relatively slower from 2015 onwards.

Considering this, the effective price rise from 2012 to 2017, on the basis of our new estimates, will be slightly lower, at 91% for Hebbal. We recommend investors in this market to hold on to their investments for two years more, considering the appreciation is higher than the city overall figure, and reap the benefits of the remaining upside potential, post which, they may exit at the end of 2017.

Meanwhile, K.R.Puram faced a number of hurdles that led to slow price appreciation in the region, traffic congestion being the primary one. The K.R.Puram stretch, connecting Bengaluru city to Kolar, is a major junction on the ORR that connects North and West Bengaluru to East Bengaluru. This bottleneck has proved to be a deterrent for residents as well as other commuters, most of them belonging to the IT sector employed in Whitefield and the ORR. The region also witnessed the proliferation of a large number of projects launched at lower rates, thereby keeping the prices under pressure.

Going forward, we envisage the effective price rise from 2012 to 2017 on the basis of our new estimates to be lower, at 54% for K.R.Puram. We recommend investors in this market to hold on to their investments for two more years, given the slackening of residential launches and the resultant increase in competitive pricing among the projects which are currently at lower prices. Besides, the price appreciation, though estimated at a lower rate, will still be higher than the city overall figure, and investors are expected to benefit from the remaining upside potential, post which, they may exit at the end of 2017.

Table 8: Review of the previously recommended investment destinations (₹/sq ft)

	Average price (₹/sq ft)			**Price growth**					**Recommended action**
	Recommended at	Current	New estimate	Projected during 2012	Realised till 2015	Revised estimate		New estimate	
	2012	2015	2017	2012-2017	2012-2015	2015-2017	Average annual	2012-2017	
Hebbal	4,250	7,100	8,100	94%	67%	14%	6.8%	91%	Hold
K.R. Puram	3,245	4,300	5,000	91%	33%	16%	7.8%	54%	Hold

Source: Knight Frank Research

CHENNAI METROPOLITAN REGION

Chennai is the capital of Tamil Nadu and the fourth most populous city in India. Strategically located, it is also the most prominent port in South India. Chennai's urban agglomeration, known as the Chennai Metropolitan Region (CMR), is spread over 1,189 sq km and consists of parts of Thiruvallur and Kancheepuram districts, apart from Chennai city.

Yashwin Bangera
Assistant Vice President - Research

CHENNAI METROPOLITAN REGION

1.

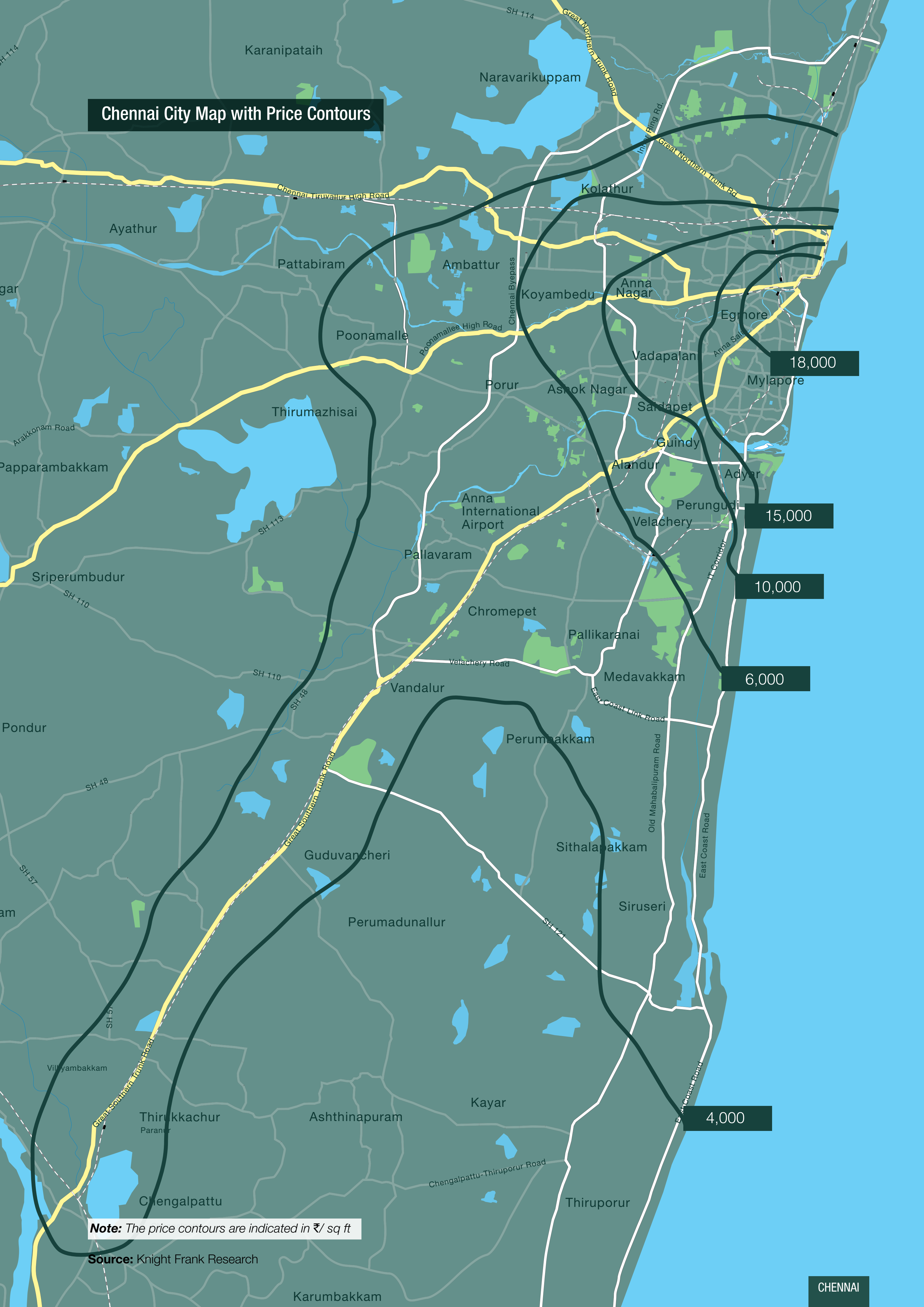
City overview

Introduction

Chennai is the capital of Tamil Nadu and the fourth most populous city in India. Strategically located, it is also the most prominent port in South India. Chennai's urban agglomeration, known as the Chennai Metropolitan Region (CMR), is spread over 1,189 sq km and consists of parts of Thiruvallur and Kancheepuram districts, apart from Chennai city. According to Census 2011, the total population of the CMR was 8.7 mn.

The development of the CMR is entrusted to the Chennai Metropolitan Development Authority (CMDA) - a nodal planning agency that prepares the master plans for the region. In September 2008, the CMDA prepared the Second Master Plan for Chennai Metropolitan Area, 2026, outlining the detailed development plan, along with land use, transportation, housing and other important aspects of the CMR.

Chennai City Map with Price Contours



Note: *The price contours are indicated in ₹/ sq ft*

Source: Knight Frank Research

> Nodes such as Perungudi, Sholinganallur and Siruseri on the OMR, along with Tambaram and Mahindra World City on GST Road have created enormous employment opportunities in South Chennai. This has led to the development of the residential market in this zone. Additionally, the focus of the state government in providing excellent road connectivity along these nodes has helped in the development of this region.

Chennai residential market overview

Chennai is divided into four broad zones: North, Central, South and West. It may be noted that being a coastal city facing the Bay of Bengal, Chennai does not have an eastern market.

Zone	Major Residential Destinations
Central	Nungambakkam, Boat Club Road, Anna Nagar, Kilpauk, T. Nagar, Mylapore, R. A. Puram
West	Sriperumbudur, Mogappair, Porur, Ambattur, Poonamallee
North	Ayanavaram, Tondiarpet, Madhavaram, Perambur
South	Old Mahabalipuram Road (OMR), Grand Southern Trunk (GST) Road, East Coast Road (ECR), Velachery, Medavakkam

Central Chennai:

Central Chennai is the oldest and most developed part of the city, with numerous corporate offices located in the Central Business District (CBD) areas of Anna Salai, Nungambakkam, Egmore, Nandanam and others. Excellent connectivity with various parts of the city, good physical and social infrastructure and the presence of organised retail have ensured that this zone commands the highest property prices in the city. Locations such as Boat Club Road, Poes Garden, Nungambakkam, T. Nagar, Mylapore and R. A. Puram are some of the prominent residential areas in Central Chennai. The majority of the residential development in the central locations comprises bungalows and independent residential units, while some pockets, such as Alwarpet, Kilpauk and Anna Nagar, are witnessing a growth in high-rise constructions as well.

West Chennai:

The saturation of residential areas in Central Chennai has encouraged real estate development towards the west of the city. The electronic hardware corridor in Sriperumbudur, and the auto and auto ancillary manufacturing units in Oragadam have also boosted the demand for residential units in this region. Multinational companies, such as Nokia, Dell, Samsung, Saint-Gobain, Renault-Nissan Alliance and Hyundai, have set up their units here. Lack of social infrastructure, the relative absence of organised retail and its distance from the city centre had limited the growth of the West zone residential market in the past. However, the Chennai Bypass, ORR and fresh development of office space in recent years have boosted the residential attractiveness of this zone.

South Chennai:

South Chennai is evolving as a commercial hub along the OMR and Grand Southern Trunk (GST) Road, with the presence of a large number of IT SEZs, IT parks and manufacturing units. Nodes such as Perungudi, Sholinganallur and Siruseri on the OMR, along with Tambaram and Mahindra World City on GST Road have created enormous employment opportunities in this region. This has led to the development of the residential market in South Chennai. Additionally, the focus of the state government in providing excellent road connectivity along these nodes has helped in the development of this region.

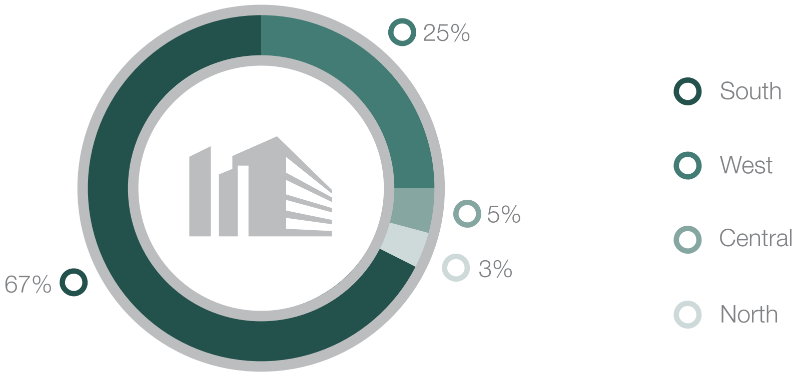
North Chennai:

North Chennai is primarily an industrial area dotted with locomotive workshops and port-related activities. The two major ports, namely Chennai Port and Ennore Port, are located in this region. Factors such as the non-availability of vacant land, narrow arterial roads and lack of employment opportunities have restricted the real estate growth of this region as compared to other parts of the city. Destinations such as Tondiarpet, Madhavaram and Perambur are the primary residential locations in these areas, with large under-construction projects. The residential demand in North Chennai is driven by business/trading communities and public sector employees.

Chennai is bound by the Bay of Bengal on the eastern side, thereby restricting its growth to the other three sides of the city. Backed by excellent road and rail connectivity, the city has been expanding three ways over the last few decades. However, development on the northern side is subdued as compared to West and South Chennai, mainly due to the presence of several industrial pockets and port-related activities in the north. Over the last few years, developers have been shifting their focus from Central Chennai to the peripheral areas of South and West Chennai due to the greater availability of jobs here.

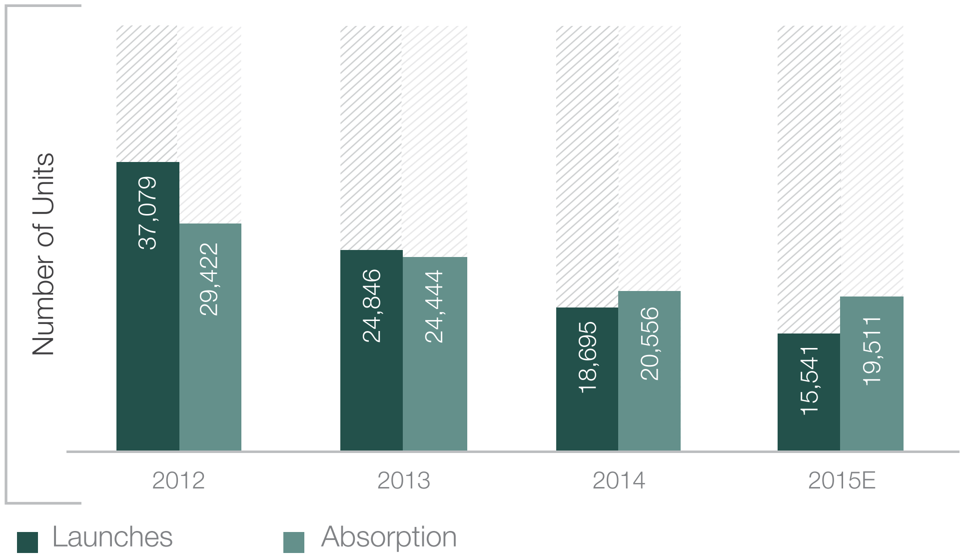
> Excellent connectivity with various parts of the city, good physical and social infrastructure and the presence of organised retail have ensured that the Central zone commands the highest property prices in the city. Locations such as Boat Club Road, Poes Garden, Nungambakkam, T. Nagar, Mylapore and R. A. Puram are some of the prominent residential areas in this zone. The majority of the residential development in the central locations comprises bungalows and independent residential units, while some pockets, such as Alwarpet, Kilpauk and Anna Nagar, are witnessing a growth in high-rise constructions as well.

Chart 1: Zone-wise split of under-construction units

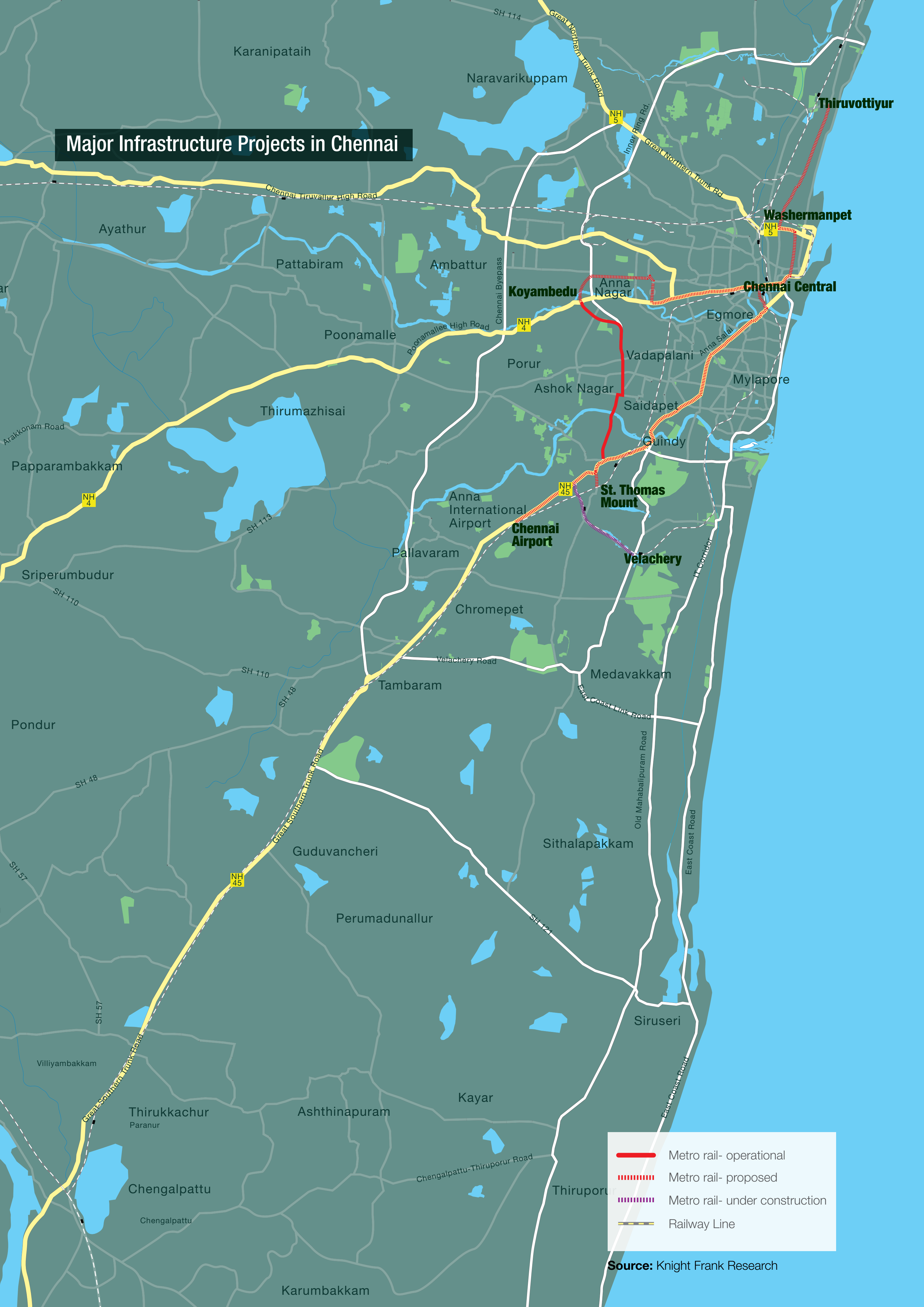


Source: Knight Frank Research

Chart 2: Demand supply trend in Chennai



Source: Knight Frank Research



Major Infrastructure Projects in Chennai

Source: Knight Frank Research

Table 1: Existing arterial road network

Name	Connectivity	Description
Arterial road network		
Anna Salai-GST Road (NH 45)	From Fort St. George to the southwest via the airport to Mahindra World City	Provides easy access from the city centre to suburbs in the south, such as Tambaram, Vandalur, Maraimalai Nagar and Singaperumalkoil
Chennai-Bangalore Highway (NH-4)	From Chennai Central railway station via Sriperumbudur to Bangalore	Connects western markets, such as Poonamallee and Sriperumbudur, with the city centre
Chennai-Kolkata Highway (NH-5)	From Basin Bridge to Kottur	Connects Chennai Port with North Chennai
Old Mahabalipuram Road (OMR)	From Madhya Kailash junction to the south via Sholinganallur to Mahabalipuram	Also known as the IT Corridor, it connects the city centre with southern suburbs, such as Perungudi, Siruseri and Kelambakkam
East Coast Road (ECR)	From Thiruvanmiyur via Uthandi to Mahabalipuram	Running parallel to the OMR, it connects the coastal locations of South Chennai
Inner Ring Road	Connects SH 94A (OMR/Rajiv Gandhi Salai) in Thiruvanmiyur and joins SH 104 near Manali	This ring road is the closest to Central Chennai and runs through prominent locations, such as Koyambedu, Anna Nagar and Villivakkam
Outer Ring Road	From Vandalur to Nemilichery	This six-lane highway decongests the city road by connecting GST Road (NH-45) with the Chennai-Bangalore Highway (NH-4) and NH-205
Bypass Road	From Krishna Nagar on GST Road to Mettupalayam on NH-5	Connects southern locations on GST Road to North Chennai

Source: Knight Frank Research

Table 2: Existing MRTS network

Name	Connectivity	Description
MRTS network		
South West Line	Chennai Beach - Tambaram - Chengalpet	Running parallel to GST Road, it connects the city centre with Mahindra World City via Tambaram and Maraimalai Nagar
North Line	Chennai Central - Ennore - Gummidipoondi	Connects the northern part of Chennai with Central Chennai via Tondiarpet
West Line	Chennai Central - Avadi - Tiruvallur	Connects the Northwestern markets of Ambatur and Avadi with city centre
MRTS	Chennai Beach - Thiruvanmiyur - Velachery	Provides easy connectivity from Velachery via TIDEL Park and Taramani to the city centre

Source: Knight Frank Research

Table 3: Upcoming arterial road network

Name	Connectivity	Description	Current status	Expected commissioning
Arterial road network				
Outer Ring Road II	Nemilichery - Nallur - Minjur	Will connect NH-205 (Nemilichery) with the Chennai Kolkata Highway (NH-5) and TPP road at Minjur through a six-lane highway	Land acquisition	2016-17

Source: Knight Frank Research

Table 4: Upcoming metro, MRTS and monorail network

Name	Connectivity	Description	Current status	Expected commissioning
Metro, MRTS and monorail network				
Chennai Metro Corridor I	Washermenpet - Chennai Central station - Chennai International Airport	It will enhance the connectivity between Chennai International Airport and central Chennai via Guindy	Under construction	2015
Chennai Metro Corridor II	Chennai Central - Anna Nagar - Vadapalani - St. Thomas Mount	It will connect the heavy-traffic route between the city centre and St. Thomas Mount	Completed till Alandur	2015
Chennai MRTS	Velachery - St. Thomas Mount	It will seamlessly connect the metro and MRTS lines at St. Thomas Mount, connecting GST Road and locations such as Alandur and Guindy to Perungudi and Central Chennai	Ready for commissioning	2015
Chennai Monorail Corridor I	Vandalur - Kathipara	Better connectivity for Vandalur and Tambaram with the city centre via Valechery	Bidding stage	Beyond 2020
Chennai Monorail Corridor II	Poonamallee - Kathipara	It will connect West Chennai via Porur	Bidding stage	Beyond 2020
Chennai Monorail Corridor III	Porur - Vadapalani	It will enhance the connectivity of Porur, as Vadapalani is also a node on Metro Corridor II	Bidding stage	Beyond 2020

Source: Knight Frank Research

2.
Top investment destinations

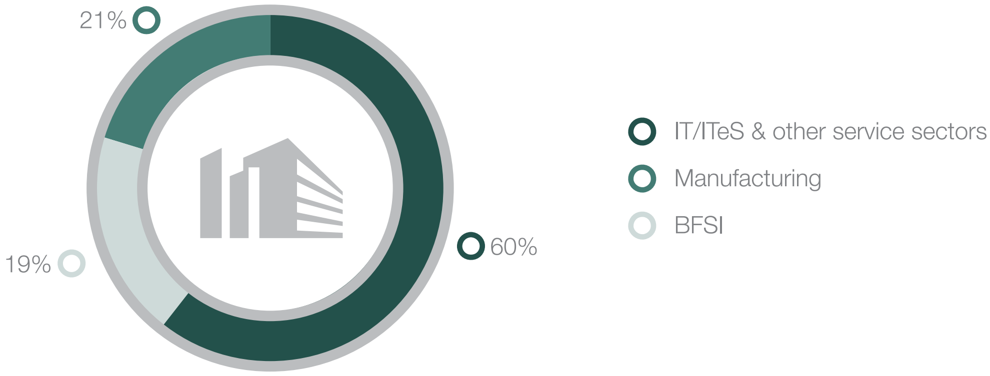
What are the drivers of Chennai's residential real estate market?

Chennai's residential real estate market has been experiencing a slowdown, as the overall demand and supply numbers have fallen consistently since 2012. Consequently, price growth has also stagnated, rendering the investment climate less than optimum for fresh real estate investments. However, as in the case of the equity markets, when certain blue chip companies will continue to attract interest even in a downturn, some locations or zones with the right fundamentals in place will outperform and yield above average investment returns over a five-year investment horizon.

Employment generation and the infrastructure that connects employment hubs to residential areas are the cornerstones for the development and growth of any residential location.

Chennai has always had a strong manufacturing base, but the new millennium ushered in an era of IT/ITeS development after Old Mahabalipuram Road (OMR) was promoted as an IT corridor, and the IT/ITeS and other services sectors (ecommerce, healthcare, etc.) are the largest employers in the city today. The IT/ITeS and other services sectors currently account for a massive 80% of the 58 mn sq ft of office stock in Chennai. The availability of a vast talent pool, favourable state government policies and an improvement in the overall economic landscape will ensure a sustained growth in the IT/ITeS and other services sectors. This will ensure that these sectors will be the largest consumers of office space and will also be the biggest drivers of the Chennai residential real estate market for our investment horizon of five years.

Chart 3: Office space break-up



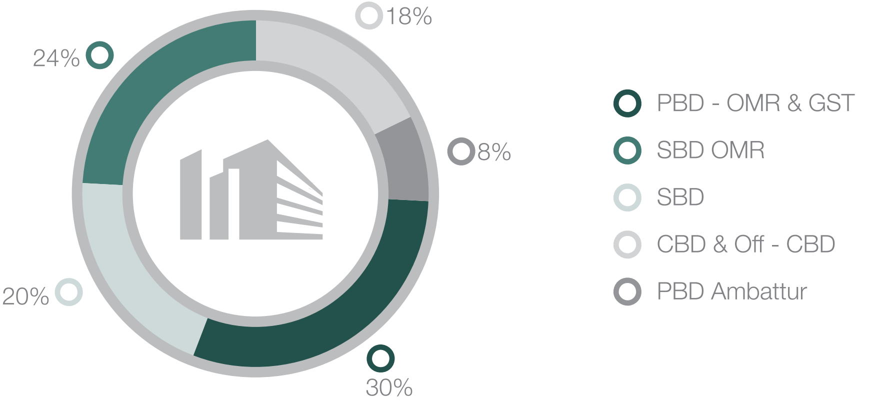
Source: Knight Frank Research

Which regions in Chennai will dominate the real estate landscape?

The Chennai office space market has expanded towards the south and southwest over the years, and over 80% of the office space today is concentrated in these zones. The OMR stretch, especially, has seen prodigious growth over the past decade, as quality office spaces tailor-made for the IT/ITeS and other services sectors have come up, and this stretch currently houses over half of the office stock in the city. The state government's initiative to promote the stretch as an IT corridor, coupled with affordable rentals, will ensure the growth of this corridor in the foreseeable future as well.

As the southern end of the Chennai office space market has thrived on the IT/ITeS sector's demand for large format office spaces, the SBD locations have attracted corporate offices and other front offices that can afford comparatively higher rentals and prefer being closer to the city centre. We do not expect these dynamics to change over our investment horizon of five years, and conclude that close to 80% of the IT/ITeS and other services sectors' workforce will continue to commute to these office hubs during the same period.

Chart 4: Zone-wise split of office space



Source: Knight Frank Research

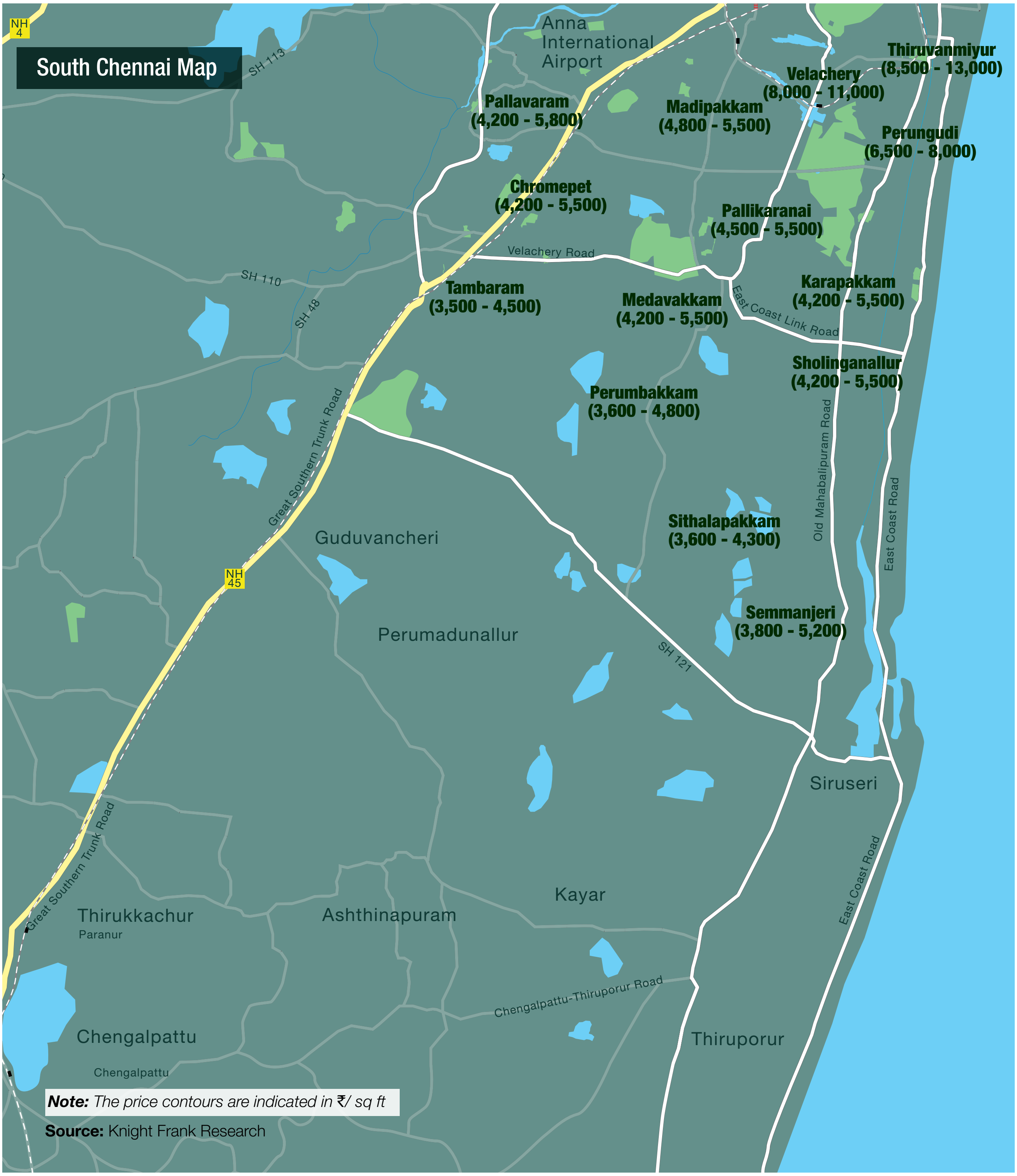
The city faces sizeable challenges in terms of transport infrastructure, which are being addressed by initiatives such as the recently completed outer ring road (ORR), the ongoing construction of the metro and near completion of the mass rapid transit system (MRTS) (Table 4). These initiatives, while significant in terms of connecting southern locations to central and west Chennai, do not provide direct connectivity to the bulk of the major office locations in the south and southwest. This requires daily commuters to rely largely on road transport to get to their places of work.

These hurdles in commuting to work have encouraged homebuyers to look for residential options closer to office locations, and have caused the proliferation of a healthy residential market in proximity to these office hubs. As the residential units coming up in these locations are also lower priced compared to other residential zones in the city, they are an attractive proposition for the resident workforce. Since we do not foresee these dynamics changing in the next five years, we expect that the demand for new residential projects will continue to sustain in south and southwest Chennai, compared to the rest of the city.

Why will prices in the peripheral locations of South Chennai not perform as well as their counterparts closer to the city centre?

Locations in South Chennai, such as Pallavaram, Madhavaram, Perungudi, and those further southward are in the immediate vicinity of over half the office space in Chennai and house competitively priced residential products as well. The dominance of these zones in terms of further office space development and the gradual growth of transport and social infrastructure will also continue over the next five years due to factors discussed earlier. Prima facie, these factors should prove to be strong drivers for price growth in any residential market.

South Chennai Map



Note: *The price contours are indicated in ₹/ sq ft*

Source: Knight Frank Research

Residential prices in locations on the OMR range from approximately ₹4,500 per sq ft in Navallur to ₹8,000 per sq ft in Perungudi. Similarly, prices in locations on GST Road at comparable distances from Adyar trade at 10-15% discounts compared to their peers on the OMR. While all these locations are a 30-40 minute drive from most of the office concentrations in the PBD - OMR and GST office markets, their prices decrease, along with their proximity to the city centre.

Residential prices are seeing huge resistance at the top end of the price band in locations such as Perungudi, as competing supply just off the OMR and in locations further south on the road, such as Thuraipakkam, offer more affordable options to the discerning buyer in this lagging market. This phenomenon of supply outstripping demand accentuates as one looks further south at locations such as Tambaram, Karapakkam, Shollingallur and beyond. Already holding almost 70% of the unsold inventory in Chennai, this market has more than adequate land available in locations along the Pallavaram-Thoraipakkam road, Vandalur-Kelambakkam road and the Velachery-Tambaram main road, among others that lie between the OMR and GST roads, and can easily form a potential supply if prices grow in the vicinity. Since these markets do not have any real supply constraints and already hold significant unsold inventories, price appreciation will be muted in the coming five years, despite a strong demand scenario.


Selected Investment Destination: Guindy - Alandur Cluster

Source: Knight Frank Research

Selected investment destination: Guindy - Alandur cluster

Both Guindy and Alandur lie just south of the Adyar river at the confluence of the GST, OMR and Poonamalee High roads and can arguably be considered as natural extensions of Central Chennai that command residential prices upwards of ₹12,000 per sq ft. These roads have seen the bulk of the office space development in the city over the last 15 years. Proximity to employment hubs and higher priced residential locations, along with infrastructure development, will be the primary drivers for price growth in this destination.

What will drive residential demand in this destination?

Over 30 mn sq ft (approximately 375,000 employees) or over half of the existing office stock in Chennai situated in locations such as Poonamallee High Road, Guindy and the OMR stretch can be accessed within 30-40 minutes from either of these locations. Additionally, over 3 mn sq ft of office space is expected to attain completion within this catchment over the next five years. This translates into incremental employment for an additional 37,500 employees.

In addition to being connected to major employment hubs via road, these locations are also well connected via the metro and MRTS routes (Table 4). The recently completed Alandur to Koyambedu metro line is accessible via Alandur and Ekkattuthangal metro stations, and can be reached from anywhere in Alandur and Guindy within 10 minutes. This metro line is also being extended to St. Thomas Mount, which also houses the soon-to-be-commissioned MRTS station. This will enable residents to switch lines seamlessly from the metro lines to the MRTS and vastly improve rail connectivity to the OMR and central Chennai. The Airport to Washermanpet metro route, which also runs through both these locations, is currently under construction and is expected to be completed by the end of 2016.

The locations are also well supported by adequate social infrastructure, such as major malls, hospitals and educational institutions - all within a 20 minute driving distance. The international airport is also just a 20 minute drive away. We believe that all these factors will prove to be strong demand drivers for the Guindy-Alandur cluster, going forward.

> Residential prices are seeing huge resistance at the top end of the price band in locations such as Perungudi, as competing supply just off the OMR and in locations further south on the road, such as Thuraipakkam, offer more affordable options to the discerning buyer in this lagging market. This phenomenon of supply outstripping demand accentuates as one looks further south at locations such as Tambaram, Karapakkam, Shollingallur and beyond.

Table 5: Connectivity from the Guindy-Alandur cluster

Access to	Guindy-Alandur cluster	
	Distance (km)	Travel time by road (min)
Bechmark locations		
Velachery	3-5	10-15
Employment hubs		
DLF IT Park	6-7	15-20
Olympia Tech Park	1-3	5-10
Ascendas IT Park	7-8	15-20
TIDEL Park	7-8	15-20
Ramanujan IT SEZ	7-8	15-20
RMZ Millenia	10-11	20-25
SP Infocity	10-11	20-25
Prince Infocity II	9-10	20-25
TVH Agnitio IT Park	8-9	15-20
Prince Infocity I	9-10	20-25
Varalakshmi Tech Park	10-11	20-25
SP Infocity III	10-11	20-25
Transportation hubs		
Chennai International Airport	8-9	15-20
Ekkaduthangal metro station	2-4	5-10
Alandur metro station	2-4	5-10
Guindy MRTS	1-2	5
Velachery MRTS	5-6	15-20
Upcoming transport infrastructure		
Guindy metro station	1-2	5
St. Thomas Mount metro station	2-3	5
St. Thomas Mount MRTS	2-3	5

Source: Knight Frank Research

Table 5: Connectivity from the Guindy-Alandur cluster

Access to	Guindy-Alandur cluster	
	Distance (km)	Travel time by road (min)
Retail hubs		
Phoenix MarketCity	4-5	10-15
The Grand Mall	7-8	15-20
The Forum Vijaya Mall	8-9	20-25
Hospitals and educational institutes		
MIOT International hospital	5-6	15-20
St. Thomas Hospital	4-5	15-20
Velachery KS Hospital	7-8	20-25
American International School	9-10	20-25
The PSSB Millennium School	4-5	10-15
D.A.V. Public School	5-6	15-20

Source: Knight Frank Research

Why will prices appreciate in this destination?

Velachery is considered the most established mature market in the immediate vicinity of Guindy and Alandur. Easy road access to the employment hubs of the OMR, Guindy and Poonamallee High Road, in addition to the accessibility of the city centre via the MRTS, and the presence of well-developed social infrastructure in terms of retail and entertainment options has rendered this location among the most desirable in South Chennai. For the purpose of this report, we have considered Velachery as the benchmark location for South Chennai. This means that residential prices in most of the locations in South Chennai will be guided by this market in the coming years. The prices in Velachery are currently in the range of ₹9,000-11,000 per sq ft.

Approximately 37,500 new jobs are expected to be created over the next five years in the office hubs within a 30-minute travel radius as established earlier. This will add to the demand for housing units in the vicinity. Velachery will also see increased buying interest due to this incremental demand, but prevailing prices might prove to be a deterrent to buyers, and this demand is bound to spill over to adjoining locations that enjoy similar characteristics but have residential products priced at significant discounts today. The Guindy-Alandur cluster, which is a 10-15 minute drive from Velachery and commands similar characteristics, will be the likely beneficiary of this spillover demand. Current prices in the Guindy-Alandur cluster range between ₹7,000-8,000 per sq ft - a significant 21% discount from prices in Velachery.

> The Guindy-Alandur cluster is expected to see far greater traction in average prices on the back of increased demand due to significant infrastructure development and existing supply constraints. Currently, average prices in this cluster are at ₹7,500 psf and trade at a significant 21% discount, compared to Velachery. We expect that, as the demand supply equation tightens further due to reasons discussed earlier, prices in the Guindy -Alandur cluster will grow by 45% and reach approximately ₹10,900 psf by 2020.

Is there a threat of excess supply?

Guindy is a well-established industrial area in Chennai, with the majority of its area dominated by industrial land parcels allotted by the Tamil Nadu Small Industries Development Corporation (SIDCO) during the 1950s. With the advent of the IT/ITeS sector and the ensuing office space boom in the city, these industrial areas are now shifting operations to the city's periphery and making way for IT and commercial office space development, which are currently a much more viable proposition. Thus, there is limited residential inventory in this location today, as zoning regulations do not permit the conversion of industrial SIDCO land to residential.

As in the case of Guindy, Alandur also has limited residential inventory, but this location has always had a residential character, contrary to Guindy. The Alandur landscape is peppered with old residential buildings that are good redevelopment candidates, and a few land parcels that are ready for development. High land prices and the fragmented nature of existing developments have deterred real estate developers from entering this micro-market, but significant developments in transport infrastructure, such as the soon-to-be-commissioned St. Thomas Mount MRTS and the upcoming metro connectivity (Table 4) is expected to enhance development interest in the residential space here. However, we expect any fresh development to only enhance the residential appeal of this micro-market and not threaten price growth during the next five years.

How much price appreciation is expected?

Velachery, which is the benchmark location in South Chennai for the purpose of our analysis, will continue to attract homebuyers and investors from the premium segment. However, average prices in Velachery have seen strong price growth over the last five years, and are currently experiencing resistance as they approach ₹10,000 per sq ft, thus testing the affordability of homebuyers. We expect Velachery to breach this barrier over the next five years, but price growth will be more muted and reach approximately ₹12,400 per sq ft at an annual growth rate of 5.5% by 2020 from current levels of ₹9,500 per sq ft.

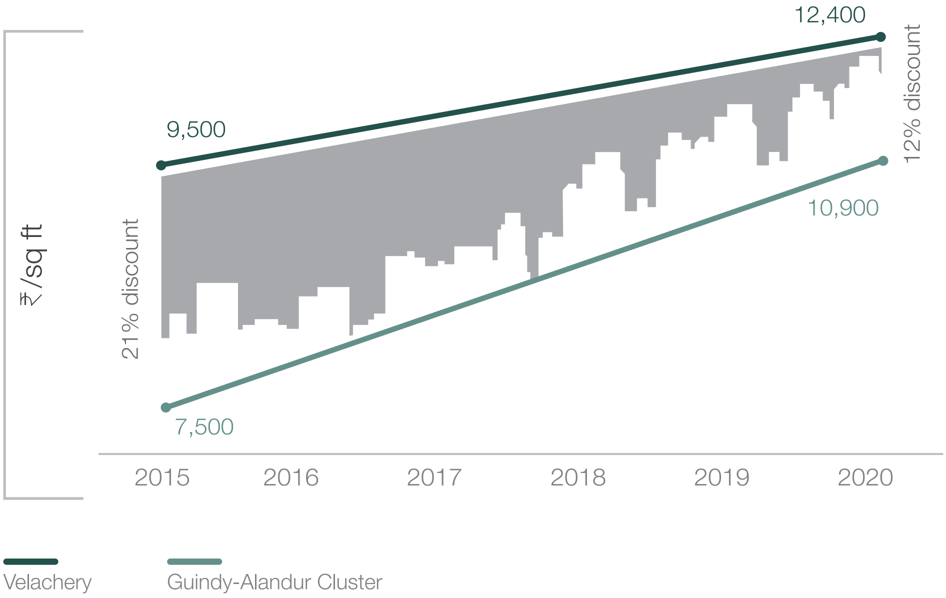
The Guindy-Alandur cluster, however, is expected to see far greater traction in average prices on the back of increased demand due to significant infrastructure development and existing supply constraints. Currently, average prices in this cluster are at ₹7,500 per sq ft and trade at a significant 21% discount, compared to Velachery. We expect that, as the demand supply equation tightens further due to reasons discussed earlier, prices in the Guindy - Alandur cluster will grow by 45% and reach approximately ₹10,900 per sq ft by 2020. Prices in the Guindy-Alandur cluster will continue to lag those in Velachery but the discount will reduce from the existing 21% to 12% by 2020.

Table 6: Price movement in benchmark location and investment destinations

	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg	Min	Max	Avg	2015 - 2020E	Avg. annual	2015	2020E
Velachery (benchmark location)	8,000	11,000	9,500	10,440	14,360	12,400	31%	5.5%		
Guindy - Alandur Cluster	7,000	8,000	7,500	10,150	11,600	10,900	45%	7.8%	21%	12%

Source: Knight Frank Research

Chart 5: Price movement in the Guindy-Alandur cluster



Source: Knight Frank Research

Is there any precedent to such a trend?

Velachery itself was in a similar situation in 2010 as the Guindy-Alandur cluster is in today. Prices in Velachery at that time were at ₹5,000 per sq ft. Adyar, which was considered the benchmark location for Velachery, commanded a healthy premium over Velachery and had prices quoting at ₹10,000 per sq ft. Access to office hubs in Guindy, OMR and GST Road, in addition to a growing retail market, reduced the huge discount in prices that Velachery suffered, during the ensuing five-year period. The completion of Phoenix MarketCity gave a huge fillip to the location's social infrastructure as well and enhanced Velachery's desirability to a large extent. This decreased the discount in prices that the location suffered compared to Adyar from 50% in 2010 to 36% in 2015. Prices in Velachery today are at ₹9,500 per sq ft, while those in Adyar are at ₹15,000 per sq ft. We believe that the Guindy-Alandur prices will move on a similar trajectory in the next five years, but the growth will be much more muted in comparison, largely because of the comparatively weaker market sentiments today.

3.

Review of the previously recommended investment destinations

We had recommended Pallikaranai and Medavakkam as investment destinations in 2012, and prices there have grown at a healthy rate compared to the Chennai residential market, which has stagnated since then. While prices in the Chennai market, as a whole, have grown by just 12% since 2012, Pallikaranai and Medavakkam have grown by 19% and 28%, respectively, during the same period. While development activity and market traction in these destinations have grown significantly, price growth has underperformed compared to our 2012 five-year estimates of 93% and 103% for Pallikarnai and Medavakkam, respectively.

The impact of the existing unsold inventories and fresh supply, in addition to a weakening investment climate, was especially telling on the Chennai residential market. Homebuyers stayed away from the market, while developers were unable to increase prices, given the weak demand scenario. Pallikaranai and Medavakkam did experience significant price momentum initially in 2012, but this prompted fresh launches by developers aided by ample availability of land in these locations and in nearby locations such as Perumbakkam, Tambaram and Kovilambakkam, which are a 10-minute drive away. Moreover, these surrounding locations were also able to draw homebuyer interest, as the prevailing prices were lower than in Pallikaranai and Medavakkam. Hence, stiff competition from such locations within South Chennai limited the upside potential in our previously recommended investment destinations.

Over the next two years, we foresee that competition from nearby relatively lower-priced locations will keep price growth under pressure. Hence, we forecast price appreciation to be limited to 10% and 9% for Pallikaranai and Medavakkam, respectively, till 2017. Considering this, the effective price rise from 2012 to 2017 on the basis of our new estimates will be 31% and 39% for the two locations, respectively. We recommend investors in these markets to hold on to their investments for two years more and reap the benefits of the remaining upside potential, post which, they may exit at the end of 2017.

Table 7: Review of the previously recommended investment destinations (₹/sq ft)

	Average price (₹/sq ft)			Price growth					Recommended action
	Recommended at	Current	New estimate	Projected during 2012	Realised till 2015	Revised estimate		New estimate	
	2012	2015	2017	2012-2017	2012-2015	2015-2017	Average annual	2012-2017	
Pallikaranai	4,200	5,000	5,500	93%	19%	10%	5%	31%	Hold
Medavakkam	3,800	4,850	5,300	103%	28%	9%	5%	39%	Hold

Source: Knight Frank Research

CHENNAI

HYDERABAD METROPOLITAN REGION

Hyderabad is the capital of Telangana and among the most populous cities of India. Hyderabad's urban agglomeration, known as the Hyderabad Metropolitan Region (HMR), is spread over 7,100 sq km.

Yashwin Bangera
Assistant Vice President - Research

HYDERABAD METROPOLITAN REGION

1.

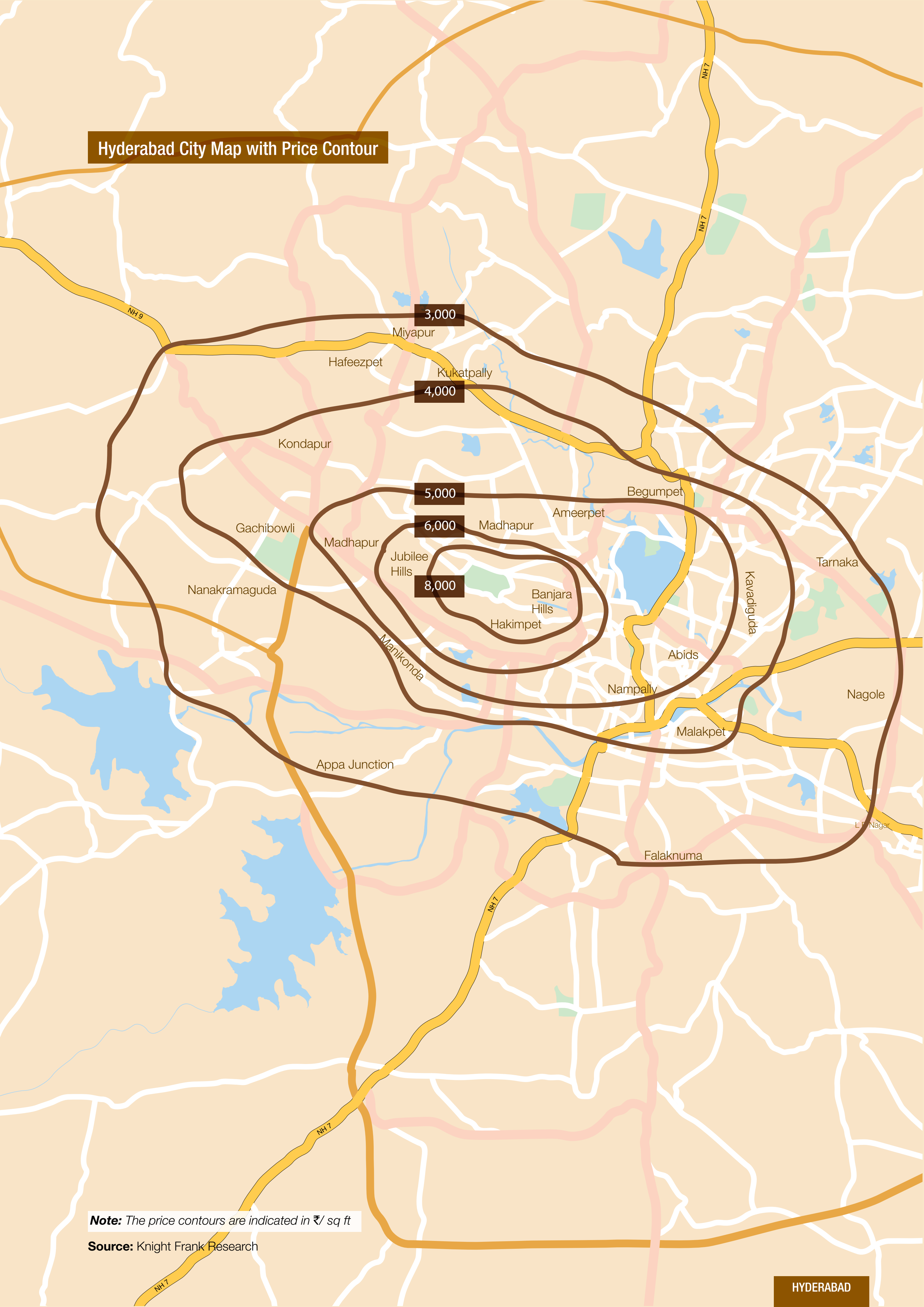
City overview

Introduction

Hyderabad is the capital of Telangana and among the most populous cities of India. Hyderabad's urban agglomeration, known as the Hyderabad Metropolitan Region (HMR), is spread over 7,100 sq km. According to Census 2011, the total population of the HMR was 7.7 mn.

Hyderabad's development was entrusted to the Hyderabad Metropolitan Development Authority(HMDA) in 2008, by merging the Hyderabad Urban Development Authority (HUDA), Hyderabad Airport Development Authority (HADA), Cyberabad Development Authority (CDA) and the Buddha Purnima Project Authority (BPPA).

Hyderabad City Map with Price Contour



Note: *The price contours are indicated in ₹/ sq ft*

Source: Knight Frank Research

> Excellent connectivity with various parts of Hyderabad, good physical and social infrastructure and the presence of organised retail have ensured that the Central Zone commands the highest property prices in the city. Locations such as Jubilee Hills and Banjara Hills are arguably the most prominent residential areas in the city today.

Hyderabad residential market overview

The Hyderabad residential market (HMR) is divided into five broad zones: Central, North, East, South and West.

Zone	Major Residential Destinations
HMR - Central	Begumpet, Banjara Hills, Jubilee Hills, Panjagutta, Somajiguda
HMR - West	Kukatpally, Madhapur, Kondapur, Gachibowli, Raidurgam
HMR - East	Uppal, Malkajgiri, L.B. Nagar
HMR - North	Kompally, Medchal, Alwal, Quthbullapur
HMR - South	Rajendra Nagar, Shamshabad

Central Hyderabad

Central Hyderabad is the oldest and most developed part of the city, with numerous corporate offices located in the Central Business District (CBD) areas of Begumpet, Punjagutta, Raj Bhavan Road, Banjara Hills, Jubilee Hills and others. Excellent connectivity with various parts of the city, good physical and social infrastructure and the presence of organised retail have ensured that this zone commands the highest property prices in the city. Locations such as at Begumpet, Jubilee Hills and Banjara Hills are arguably the most prominent residential areas in Central Hyderabad. The majority of the residential development in the central locations of Jubilee Hills and Banjara Hills comprises bungalows and independent residential units, while some pockets, such as the old city areas, are among the most congested in the city.

West Hyderabad

The saturation of residential areas in Central Hyderabad has encouraged real estate development towards the west of the city. The IT corridor in HITEC City, and the Financial District in Gachibowli have also boosted demand for residential units in the West region, which accounts for approximately 60% of the total units under construction. Demand in this region is end user-driven, the majority of which caters to IT/ITeS employees in and around HITEC City and Gachibowli. Multinational corporations, such as Microsoft, Google, IBM, Amazon, Oracle, Accenture, Infosys and TCS have set up large facilities here. Ample social infrastructure in terms of organised retail and multiple entertainment options have rendered this zone the most desirable in Hyderabad.

East Hyderabad

The eastern zone comprises locations such as Uppal, Nacharam, Mallapur, Kapra, Cherlapally, Pocharam, Kuntloor, Rampally and Ghatkesar. Nearly 7% of the total units under construction fall in this zone. Uppal remains one of the favoured destinations in this micro-market. Phase II of the ORR, which is under construction, will improve the traffic situation and connectivity in the eastern zone.

South Hyderabad

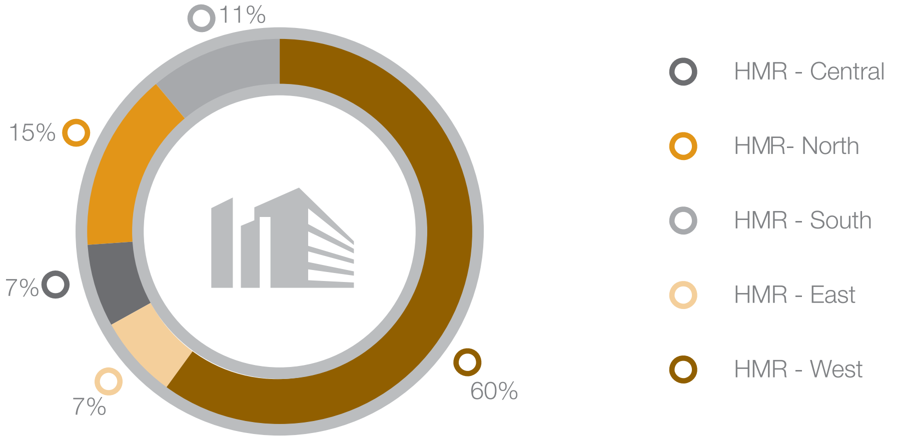
Malakpet, Upparpally, Saidabad, Santosh Nagar, Rajendra Nagar and Shamshabad fall in the southern zone. With the development of the Rajiv Gandhi International Airport at Shamshabad and other developments, such as SEZs, Hardware Park and Fab City, this zone has been growing as a residential location and has the third-largest number of units under construction today. However, its distance from the city and lack of social infrastructure are still deterrents to demand.

North Hyderabad

The northern zone constitutes 15% of the total under-construction units in the Hyderabad market, and is driven by industrial/ warehouse development and its proximity to the cantonment area. Most of the supply in the North zone has come up in Kompally, Quthbullapur, Nagpur Highway, Yarpal and Shamirpet.

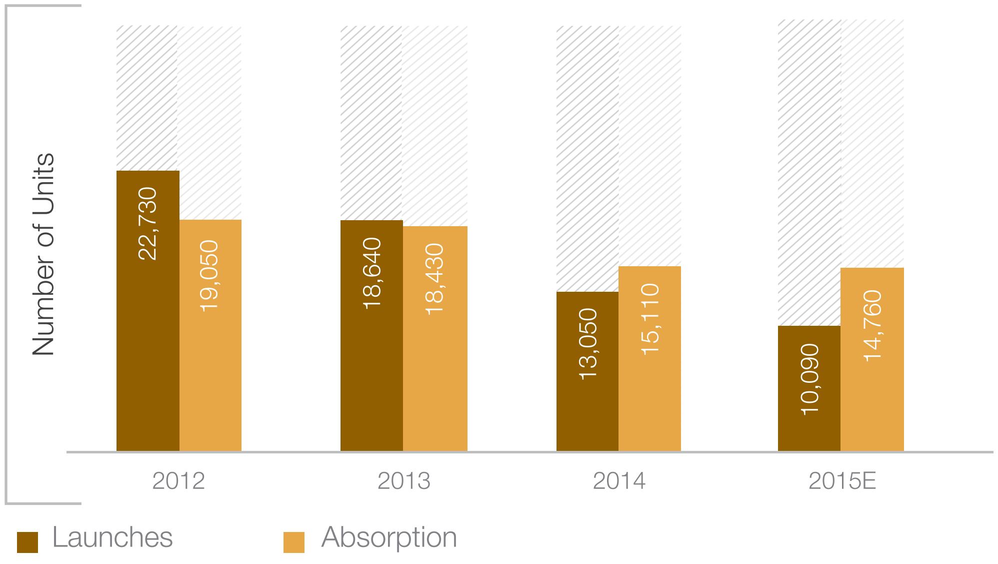
> The IT corridor in HITEC City, and the Financial District in Gachibowli have also boosted demand for residential units in the West region, which accounts for approximately 60% of the total units under construction.

Chart 1: Zone-wise split of under-construction units



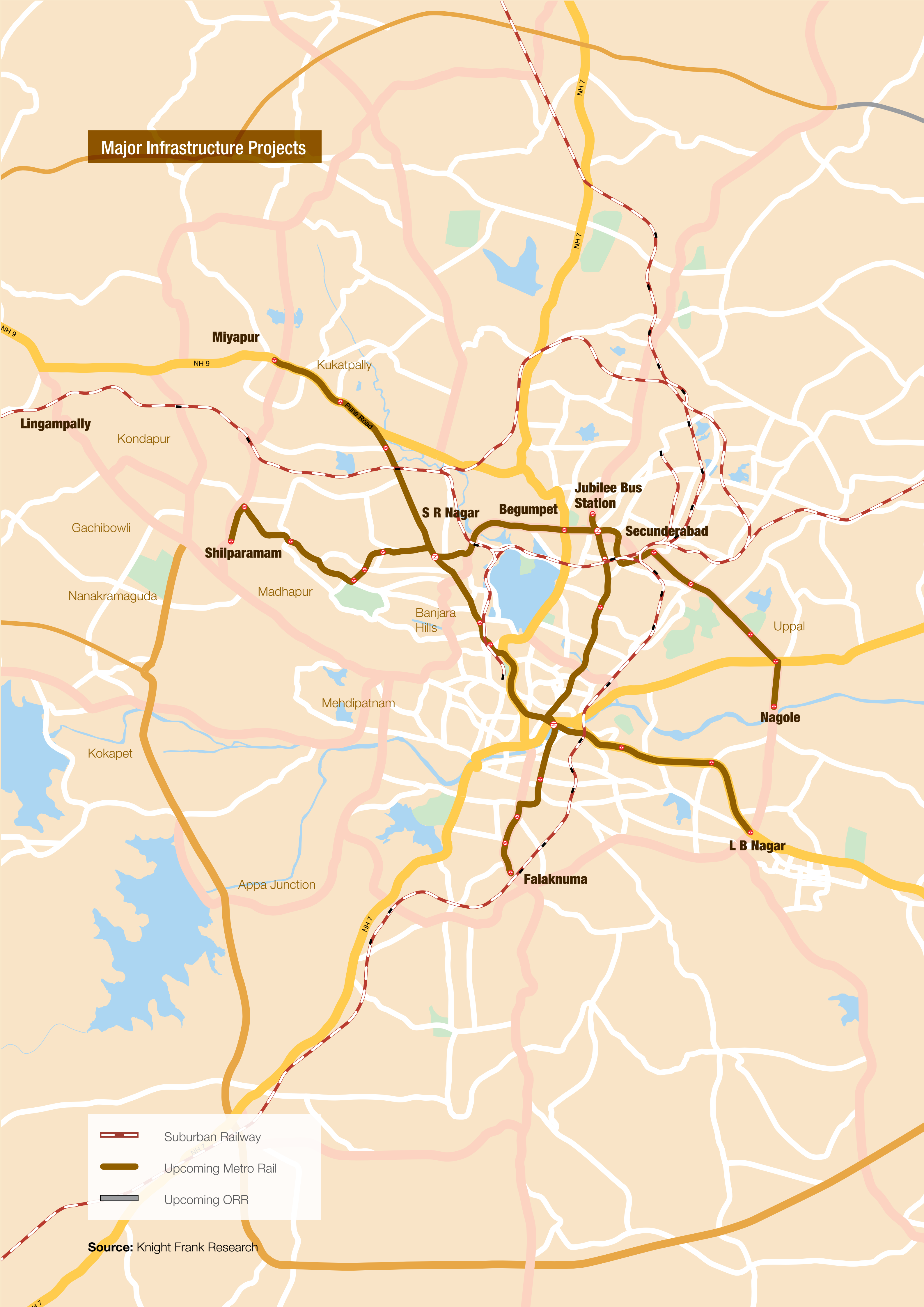
Source: Knight Frank Research

Chart 2: Demand-supply trend in Hyderabad



Source: Knight Frank Research

Major Infrastructure Projects



Source: Knight Frank Research

Table 1: Existing arterial road and rail network

Name	Connectivity	Description
Road and Rail Network		
Hyderabad ORR	This is a radial road that provides multiple access and exit points around the city	The Nehru Outer Ring Road encircles the city of Hyderabad and is a 158-km, 8-lane road
Hyderabad Elevated Expressway (P.V. Narasimha Rao Elevated Expressway)	This expressway connects Hyderabad International Airport to Mehdipatnam	This is a 11.6-km long expressway connecting the city centre to the airport
Hyderabad Inner Ring Road (IRR)	The road passes through Mehdipatnam, Banjara Hills, Punjagutta, Mettuguda, Begumpet, Tarnaka, Habsiguda, Uppal, NH-202 via Ghatkesar road, Nagole, L. B. Nagar, Santosh Nagar crossroads, ChandrayanGutta, Kurnool highway, Rajendra Nagar Bypass Road, Attapur and Rethibowli	It is a 50-km long arterial ring road encircling the inner perimeter of the city
Mumbai Highway (NH-9)	This highway passes through Kukatpally, Patancheru, Chanda Nagar, Punjagutta, Dilsukhnagar, L. B. Nagar and Hayathnagar	It is an arterial road that connects the northwest and southeast locations to the centre of Hyderabad
National Highway 7	This highway passes through Medchal, Quthbullapur, Kompally, Secunderabad, Shivarampally and Gandiguda	It is an arterial road that connects the north and south locations to the centre of Hyderabad
Warangal Highway (NH-163)	This highway passes through Uppal, Pocharam, Ghatkesar and Ramananthapur	It connects the eastern locations to the centre of Hyderabad
Old Mumbai Highway	It connects locations such as Mehdipatnam, Raidurgam, Shaikpet, Gachibowli, Serilingampally and Chanda Nagar	It connects the western locations to the centre of Hyderabad
Hyderabad Surburban Railway	It connects Lingampally in the west, Medchal in the north, Falaknuma in the south and Manoharabad in the east to Secunderabad	Arterial railway system aimed at bringing end to end connectivity in the city

Source: Knight Frank Research

Table 2: Upcoming arterial road network

Name	Connectivity	Description	Current Status	Expected Commissioning
Road Network				
Outer Ring Road (Northeast connector)	This road will connect Shamirpet and Ghatkesar on the ORR	It will complete the ORR and provide complete radial connectivity around the city	Under construction	2016

Source: Knight Frank Research

Table 3: Upcoming Metro Corridor

Name	Connectivity	Description	Current Status	Expected Commissioning
Metro Corridor				
Corridor I	Miyapur-L. B. Nagar	29.9-km northwest to southeast connector that will run along the Mumbai Highway (NH-9)	1) Testing started on the 11-km Miyapur to SR Nagar stretch scheduled for completion in 2017 2) 17.9-km SR Nagar to L. B. Nagar stretch is under construction and scheduled for completion in 2016	2017
Corridor II	JBS-Falaknuma	14.8-km metro line connecting southern locations up to Falaknuma to Jubilee Bus Station	Under construction and scheduled for completion in late 2016	2017
Corridor III	Shilparamam-Nagole	26.5-km east-west line that will connect eastern locations such as Uppal and Nagole to HITEC City in the west	1) 11-km Nagole to Secunderabad stretch scheduled for completion in December 2015 2) 10-km Secunderabad to Begumpet line under construction but mired in land acquisition issues 3) 9.5-km Begumpet to Shilparamam line scheduled for completion in 2016	2017

Source: Knight Frank Research

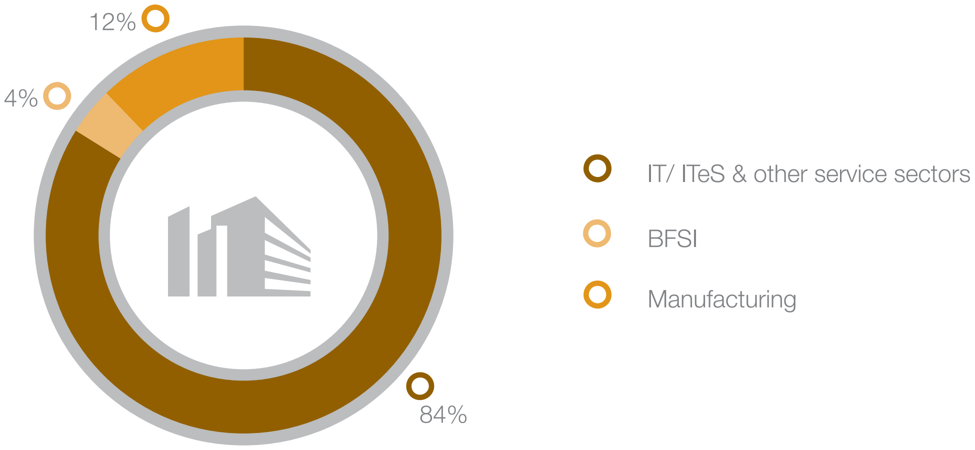
2. Top investment destinations

What are the drivers of Hyderabad's residential real estate market?

The Hyderabad real estate market has been the victim of a political storm that caused it to be left out of the broad-based recovery in residential prices that all the Indian markets experienced after the global financial crisis. This political deadlock was finally broken when the state of Telangana was formed in 2014. The welcome closure of the Telangana issue, coupled with the fact that Hyderabad is the most affordable residential market among the country's top seven cities, along with NCR, Mumbai, Bengaluru, Chennai, Pune and Kolkata, makes a convincing case for a significant and sustained increase in market traction over a five-year investment horizon. Market traction on the ground thus far, however, is not as encouraging. The downward trajectory of the demand curve has not changed since 2012, but is showing definite signs of bottoming out, and could well be on the verge of turning the corner.

Employment generation and the infrastructure that connects employment hubs to residential areas are the cornerstones for the development and growth of any residential location. The Hyderabad economy has always had a manufacturing base, but the focus on the development of the IT/ITeS sector by the state government changed the economic and real estate landscape of the city completely during the new millennium. The IT/ITeS and other services sectors (ecommerce, healthcare, etc.) are the largest employers in the city today and currently account for a massive 84% of the 62 mn sq ft of office stock in Hyderabad. The availability of a vast talent pool, favourable state government policies and an improvement in the overall economic landscape will support the sustained growth of the IT/ITeS and other services sectors. This will ensure that these sectors will be the largest consumers of office space and the biggest drivers of the Hyderabad residential real estate market during our investment horizon of five years.

Chart 3: Office space break-up

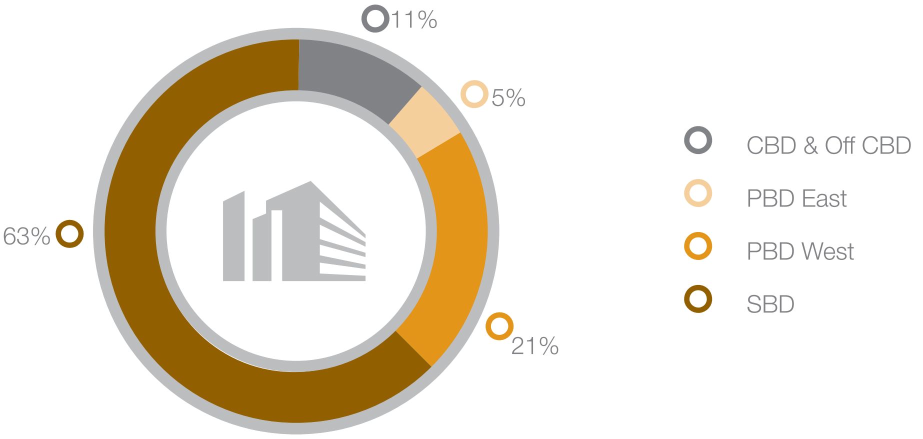


Source: Knight Frank Research

Which regions in Hyderabad will dominate the real estate landscape?

The core of the Hyderabad office space market has clearly shifted west and now forms the new centre of the city's economic landscape. Locations in west Hyderabad, such as HITEC City, Gachibowli, Raidurgam, Kondapur and Kothaguda, which are situated in the SBD and PBD West zones, have seen prodigious growth over the last decade, as quality office spaces tailor-made for the IT/ITeS and other services sectors have come up there. The SBD and PBD West zones constitute the west of Hyderabad and currently house approximately 84% of the office space stock in the city. The state government's resolve to continue to promote these zones as IT/ITeS and financial sector growth corridors will ensure their growth during the foreseeable future as well.

Chart 4: Zone-wise split of office space



Source: Knight Frank Research

Table 4: Business Districts in Hyderabad

Business district	Micro-markets
CBD & Off-CBD	Banjara Hills, Jubilee Hills, Begumpet, Ameerpet, Somajiguda, Himayat Nagar, Raj Bhavan Road, Punjagutta
SBD	HITEC City, Kondapur, Manikonda, Kukatpally, Raidurg
PBD West	Gachibowli, Kokapet, Madinaguda, Nanakramguda, Serilingampally
PBD East	Uppal, Pocharam

Source: Knight Frank Research

The city faces sizeable challenges in terms of transport infrastructure, as a large proportion of the population has to travel over an hour to get to the SBD and PBD West locations from Central and East Hyderabad during peak hours. These bottlenecks will be addressed by the under-construction metro to an extent, but the concentrated development of the IT/ITeS sector in the west necessitates the workforce's need for residences in proximity to their workplaces. The West zone has also developed a residential ethos that encompasses all characteristics that the young and mobile IT employee would aspire for. A vibrant retail landscape, replete with restaurants, malls, and multiple entertainment options, in addition to high quality schools, hospitals and a low crime rate, make this zone stand out in terms of residential desirability.

Residential prices in HITEC City are currently in the range of ₹4,200-5,800 per sq ft. While prices in HITEC City may prove unaffordable for the average IT employee, one could consider locations in North, East and South Hyderabad that have residential prices as low as ₹2,800 per sq ft. However, commute times from these locations to HITEC City currently exceed an hour, which is a major deterrent for prospective homebuyers.

Certain locations, such as Uppal and L.B. Nagar in the East and Falaknuma in the South, which also trade in the price band of ₹2,800 - 3,200 per sq ft, are expected to see significant improvements in terms of connectivity through the metro. Commute time to employment hubs in West Hyderabad, however, will still exceed 30-40 minutes, despite the upcoming metro. Since there are locations towards the western periphery within a commutable distance of 30 minutes from HITEC City within the price range of ₹3,100-3,400 per sq ft, these are a much more prudent option for home-buyers, compared to the other zones, even with a 10% higher price point.

Apart from the comparative advantage that locations in West Hyderabad have over their counterparts in the rest of the city in terms of prevailing residential prices and commute times, they also fare better in terms of access to social infrastructure. These hurdles in commuting to work and the more evolved residential ecosystem have encouraged homebuyers to look for residential options closer to office locations in West Hyderabad, and have caused the proliferation of a healthy residential market in these locations. Since we do not foresee these dynamics changing significantly in the next five years, we expect that the demand for new residential projects will continue to sustain in West Hyderabad, compared to the rest of the city.

> “The phenomenon of additional supply restricting prices only accentuates as one moves further away from HITEC City towards the west, north or south. Since these markets do not have any real supply constraints and already hold significant unsold inventories, price appreciation will be muted in the coming five years, despite a strong demand scenario.”

Why will prices in all locations within a 30-minute commute from HITEC City and Gachibowli not see strong price appreciation?

Residential prices within the said radius gradually increase from residential locations on the western periphery, such as Serilingampally, Chanda Nagar and Miyapur towards Banjara Hills east of HITEC City as one moves towards the city centre. The congestion factor also increases towards the east of HITEC City, as these are older and more established residential catchments. Banjara Hills and Jubilee Hills, towards the east of HITEC City, are arguably considered the most premium locations in Hyderabad, and apartments here command the highest prices, in the range of ₹6,500-12,000 per sq ft, effectively putting them beyond the reach of most of the IT workforce that forms bulk of the demand base in the city.

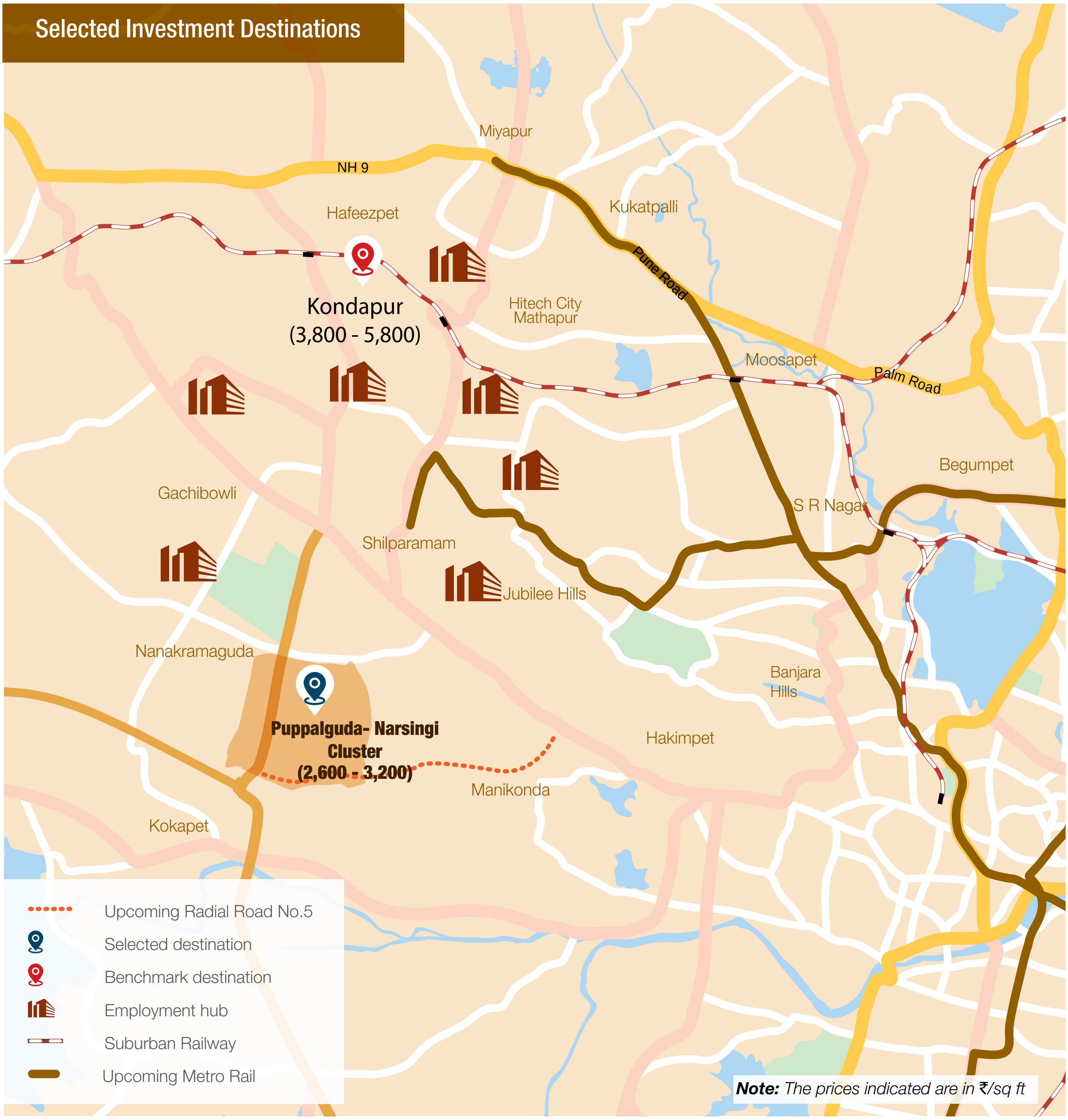
With the exception of locations towards the east of HITEC City, most of the remaining residential products within this 30-minute drive radius from HITEC City are priced at ₹3,800-5,000 per sq ft. There is also ample availability of land west of HITEC City, where new supply can easily come, in case the residential prices grow in the vicinity. This phenomenon of additional supply restricting prices only accentuates as one moves further away from HITEC City towards the west, north or south. Since these markets do not have any real supply constraints and already hold significant unsold inventories, price appreciation will be muted in the coming five years, despite a strong demand scenario.

West Hyderabad Map

***Note:** The prices indicated are in ₹/sq ft*

Source: Knight Frank Research

Selected Investment Destinations



Note: *The prices indicated are in ₹/sq ft*

Source: Knight Frank Research

> Close to 50 mn sq ft (approximately 625,000 employees) or nearly 80% of the existing office stock in Hyderabad situated in locations such as HITEC City, Gachibowli, Nanakramguda, Raidurgam and Kothaguda can be accessed within 30 minutes from the Puppalguda-Narsingi cluster via road. Additionally, approximately 10 mn sq ft of office space is expected to attain completion within this catchment over the next five years. This translates into incremental employment for an additional 125,000 employees.

What will drive residential demand in this destination?

Both Puppalguda and Narsingi lie just south of HITEC City and Gachibowli, which have seen the bulk of the office space development in Hyderabad during the last 15 years. During this period, both, HITEC City and Gachibowli have also evolved as residential destinations, commanding prices in the range of ₹4,200-5,800 per sq ft. Proximity to employment hubs and higher-priced residential locations, along with infrastructure development, will be the primary drivers for price growth in the Puppalguda-Narsingi cluster.

Close to 50 mn sq ft (approximately 625,000 employees) or nearly 80% of the existing office stock in Hyderabad situated in locations such as HITEC City, Gachibowli, Nanakramguda, Raidurgam, Kondapur and Kothaguda can be accessed within 30 minutes from the Puppalguda-Narsingi cluster via road. Additionally, approximately 10 mn sq ft of office space is expected to attain completion within this catchment over the next five years. This translates into incremental employment for an additional 125,000 employees.

Currently, a large portion of Puppalguda that lies east of the ORR is connected to HITEC City via the Lanco Hills road and HITEC City main road. An alternative route exists via the ORR through the Narsingi-Puppalguda main road, which is highly congested and in a state of disrepair, thus taking much more time to traverse. However, this location will be connected directly to the ORR via the radial road no.5 which is a four lane road currently under construction and will cut the current road commute to HITEC City from 25-30 minutes to approximately 15 minutes. Additionally, the Hyderabad Metropolitan Water Supply and Sewerage Board (BWSSB) has taken the initiative to provide piped water supply to the Puppalaguda Gram Panchayat by the first half of 2016, which will enhance the residential dynamics of this location cluster even further.

These locations are also well supported by adequate social infrastructure, such as major malls, hospitals and educational institutions - all within a 30-minute drive. The international airport is also just a 30-minute drive away. Also under construction is a flyover that will connect the cluster to the Old Mumbai Highway close to Toli Chowki, further improving its connectivity to the city centre. We believe that all these factors will prove to be strong demand drivers for the Puppalguda-Narsingi cluster, going forward.

Table 5: Connectivity from the Puppalguda-Narsingi cluster

	Puppalguda - Narsingi cluster	
	Distance (Km)	**Travel time by road (min)**
Bechmark locations		
Kondapur	9 - 11	25 - 30
mployment hubs		
DLF Cybercity	9 - 10	25 - 30
The V	8 - 9	20 - 25
Raheja Mindspace	7 - 8	15 - 20
Cyber Gateway	8 - 9	20 - 25
Avance Business Hub	8 - 9	20 - 25
Cyber Towers	8 - 9	20 - 25
CyberPearl	8 - 9	20 - 25
Meenakshi Tech Park	8 - 9	20 - 25
Q City	7 - 8	15 - 20
Mantri Cosmos	7 - 8	15 - 20
Divyasree Orion	7 - 8	15 - 20
Transportation hubs		
Hyderabad International Airport	28 - 30	25 - 30
Outer Ring Road (ORR)	3 - 5	10 - 12
Old Mumbai Highway	4 - 6	10 - 15

Source: Knight Frank Research

> The Puppalguda - Narsingi cluster will be connected directly to the ORR via the radial road no. 5, a four lane road which is currently under construction and will cut the current road commute to HITEC City from 25-30 minutes to approximately 15 minutes. Additionally, the Hyderabad Metropolitan Water Supply and Sewerage Board (BWSSB) has taken the initiative to provide piped water supply to the Puppalaguda Gram Panchayat by the first half of 2016, which will enhance the residential dynamics of this location cluster even further.

> Approximately 125,000 new jobs are expected to be created over the next five years in the office hubs within a 30-minute travel radius as established earlier. This will add to the demand for housing units in the vicinity. Kondapur will also see increased buying interest due to this incremental demand, but prevailing prices might prove to be a deterrent to discerning buyers, and this demand is bound to spill over to locations that enjoy similar characteristics but have residential products priced at significant discounts today.

Table 5: Connectivity from the Puppalguda-Narsingi cluster

	Puppalguda - Narsingi cluster	
	Distance (Km)	**Travel time by road (min)**
Upcoming transport infrastructure		
Radial Road No. 5 (connecting ORR)	1 - 2	<5
Retail hubs		
Inorbit Mall	9 - 11	25 - 30
GVK One mall	11 - 13	40 - 50
Forum Sujana Mall	14 - 17	45 - 55
Hospitals and Educational institutes		
Continental Hospitals	10 - 12	20 - 25
Premier Hospital	11 - 13	20 - 25
J.J Hospital	11 - 13	40 - 50
Oakridge International School	5 - 7	15 - 20
Rockwell International School	12 - 14	25 - 30
Orchids The International School	12 - 14	25 - 30

Source: Knight Frank Research

Why will prices appreciate in this destination?

Kondapur is considered among the most established residential markets in the vicinity of the Puppalguda-Narsingi cluster. Direct access to the employment hubs of the SBD and PBD West and the presence of well-developed social infrastructure in terms of retail and entertainment options have rendered this location among the most desirable in West Hyderabad. For the purpose of this report, we have considered Kondapur as the benchmark location for West Hyderabad. This means that residential prices in most locations in West Hyderabad will be guided by this market in the coming years. Prices in Kondapur are currently in the range of ₹3,800-5,800 per sq ft.

Approximately 125,000 new jobs are expected to be created over the next five years in the office hubs within a 30-minute travel radius as established earlier. This will add to the demand for housing units in the vicinity. Kondapur will also see increased buying interest due to this incremental demand, but prevailing prices might prove to be a deterrent to discerning buyers, and this demand is bound to spill over to locations that enjoy similar characteristics but have residential products priced at significant discounts today. The Puppalguda-Narsingi cluster, which is less than a 30-minute drive from Kondapur and commands similar connectivity characteristics, is likely to benefit from this spillover demand. Current prices in the cluster range between ₹2,600-3,200 per sq ft - a significant 40% discount from prices in Kondapur.

> Currently, average prices in the Puppalguda - Narsingi cluster are at ₹2,900 per sq ft and trade at a significant 40% discount, compared to Kondapur. We expect that, as the demand-supply equation tightens further, prices in this cluster will grow by 41% and reach approximately ₹4,100 per sq ft by 2020.

Is there a threat of excess supply?

The Puppalguda-Narsingi cluster is a suburb that runs along both sides of the ORR. Both Puppalguda and Narsingi evolved as fringe residential areas, primarily housing the blue-collared workforce of West Hyderabad. The area towards the east side of the ORR already has significant residential development and comparatively fewer land parcels available. It is bound on the north by heritage rock formations of Khajaguda that restrict real estate development. Also at play is the fact that large tracts of land are under litigation in Puppalguda, as they were allotted to evacuees from Pakistan, and development is not currently possible here, due to on-going legal proceedings. The west side of the Puppalguda-Narsingi cluster has seen greater residential development and holds potential for more, as there is sufficient land available. However, we do not believe that supply will be significant enough to hamper price appreciation in this cluster as the base prices are much lower than locations with similar connectivity characteristics.

How much price appreciation is expected?

Kondapur, which is the benchmark location in West Hyderabad for the purpose of our analysis, will continue to attract homebuyers and investors. However, average prices in Kondapur are currently experiencing resistance as they approach ₹5,000 per sq ft, thus testing the homebuyers' affordability. While we expect Kondapur to breach this barrier over the next five years, price growth will be more muted and reach approximately ₹6,100 per sq ft at an annual growth rate of 4.9% by 2020, from the current level of ₹4,800 per sq ft.

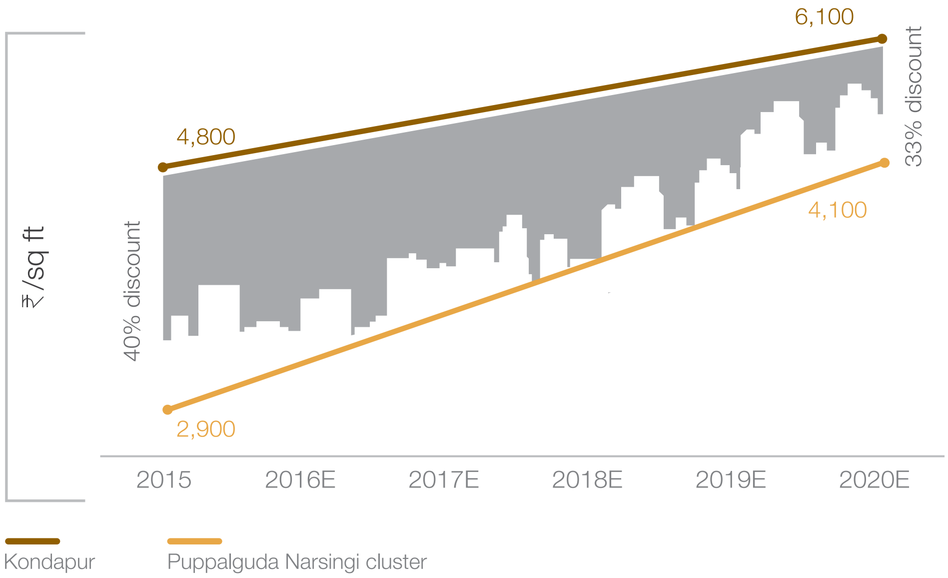
The Puppalguda- Narsingi cluster, however, is expected to see far greater traction in average prices on the back of increased demand due to improved connectivity, supply constraints and the fact that this will be arguably the only location within a 20-minute commute from HITEC City and Gachibowli at such a low price base. Currently, average prices in this cluster are at ₹2,900 per sq ft and trade at a significant 40% discount, compared to Kondapur. We expect that, as the demand-supply equation tightens further due to the reasons discussed earlier, prices in the Puppalguda-Narsingi cluster will grow by 41% and reach approximately ₹4,100 per sq ft by 2020. Prices in this cluster will continue to lag behind those in Kondapur but the discount will reduce from the existing 40% to 33% by 2020.

Table 6: Price movement in the benchmark location and investment destinations

	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020E	Avg. annual	2015	2020E
Kondapur	3,800	5,800	4,800	4,850	7,350	6,100	27%	4.91%		
Puppalguda - Narsingi cluster	2,600	3,200	2,900	3,700	4,500	4,100	41%	7.17%	40%	33%

Source: Knight Frank Research

Chart 5: Price movement in the Puppalguda-Narsingi cluster



Source: Knight Frank Research

Is there any precedent to such a trend?

In 2008, Kondapur was in a situation similar to the Puppalguda-Narsingi cluster today. Prices in Kondapur were at ₹3,000 per sq ft at that time. Jubilee Hills, which was considered the benchmark location for Kondapur, commanded a healthy premium over Kondapur and had prices at ₹4,200 per sq ft. Access to office hubs in HITEC City and Gachibowli, in addition to a growing retail market, reduced the huge discount in prices that Kondapur suffered during the ensuing five-year period. The huge influx of office space during that period brought in multitudes of employees looking for more affordable options closer to their workplaces and encouraged price growth to a large extent. This decreased the discount in prices that the location suffered compared to Jubilee Hills - from 29% in 2008 to 23% in 2012. Prices in Kondapur are at ₹4,800 per sq ft today, while those in Jubilee Hills are at ₹6,500 per sq ft. We believe that the Puppalguda-Narsingi prices will move along a similar trajectory in the next five years.


HYDERABAD

NATIONAL CAPITAL REGION

The National Capital Region (NCR) is spread over 43,374 sq km, making it one of the largest urban agglomerations in the world. The NCR consists of the entire National Capital Territory of Delhi as well as select urban areas from its neighbouring states of Haryana, Rajasthan and Uttar Pradesh (UP).

Ankita Sood
Consultant - Research

NATIONAL CAPITAL REGION

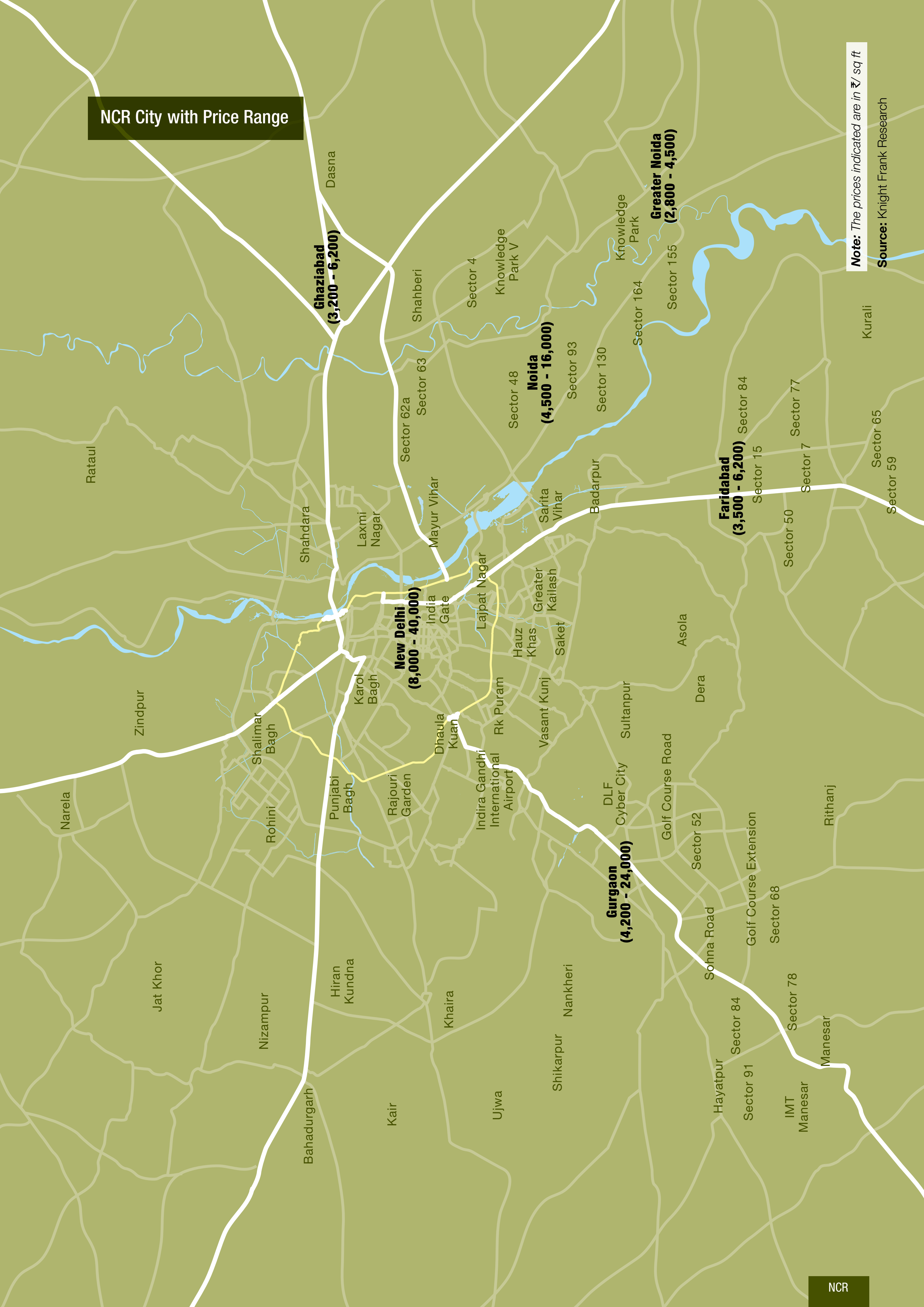
1.
City overview

Introduction

The National Capital Region (NCR) is spread over 43,374 sq km, making it one of the largest urban agglomerations in the world. It was initially conceived under the first Master Plan for Delhi in 1962, and was conceptualised with the foremost objective of creating a metropolitan area around Delhi, so as to ease the pressure on the national capital. NCR consists of the entire National Capital Territory (NCT) of Delhi, as well as select districts from the neighbouring states of Haryana, Rajasthan and Uttar Pradesh (UP). Due to this lateral development, peripheral areas such as Gurgaon, Noida and Greater Noida emerged as the major sub-regions of NCR.

The growth of the NCR region led to the growth of the service industry, and the region witnessed huge immigration from neighbouring states. This growth is evident from the steep 3.6% annual rise in population during the decade 2001-2011, which pegs the total population at 52.60 mn, of which 59% is urban. The prominence of the main urban centres can be derived from the fact that of the total 31 mn urban population of NCR, 74% is constituted by urban centres, namely the NCT of Delhi, Gurgaon, Faridabad, Ghaziabad and Gautam Budh Nagar (Noida and Greater Noida).

NCR City with Price Range



Note: *The prices indicated are in ₹/ sq ft*

Source: Knight Frank Research

Table 1: Constituents of NCR

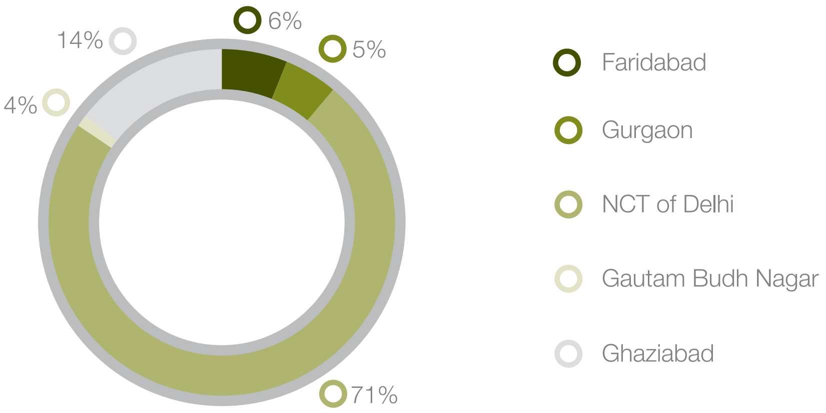
State/ UT	Regions	Area (sq km)
Delhi	Delhi - NCT	1,483
Haryana	Faridabad, Gurgaon, Mewat, Rohtak, Sonepat, Rewari, Jhajjar, Panipat, Palwal, Karnal, Jind	18,650
UP	Meerut, Ghaziabad, Gautam Budh Nagar, Bulandshahr, Baghpat, Muzaffarnagar	14,861
Rajasthan	National	8,380
Total		43,374

Source: National Capital Region Planning Board

The National Capital Region Planning Board (NCRPB) was formed under the NCR Planning Board Act, 1985, by the. Ministry of Urban Development. The central focus of the board was to coordinate NCR's development with the state governments of Haryana, Uttar Pradesh and Rajasthan.

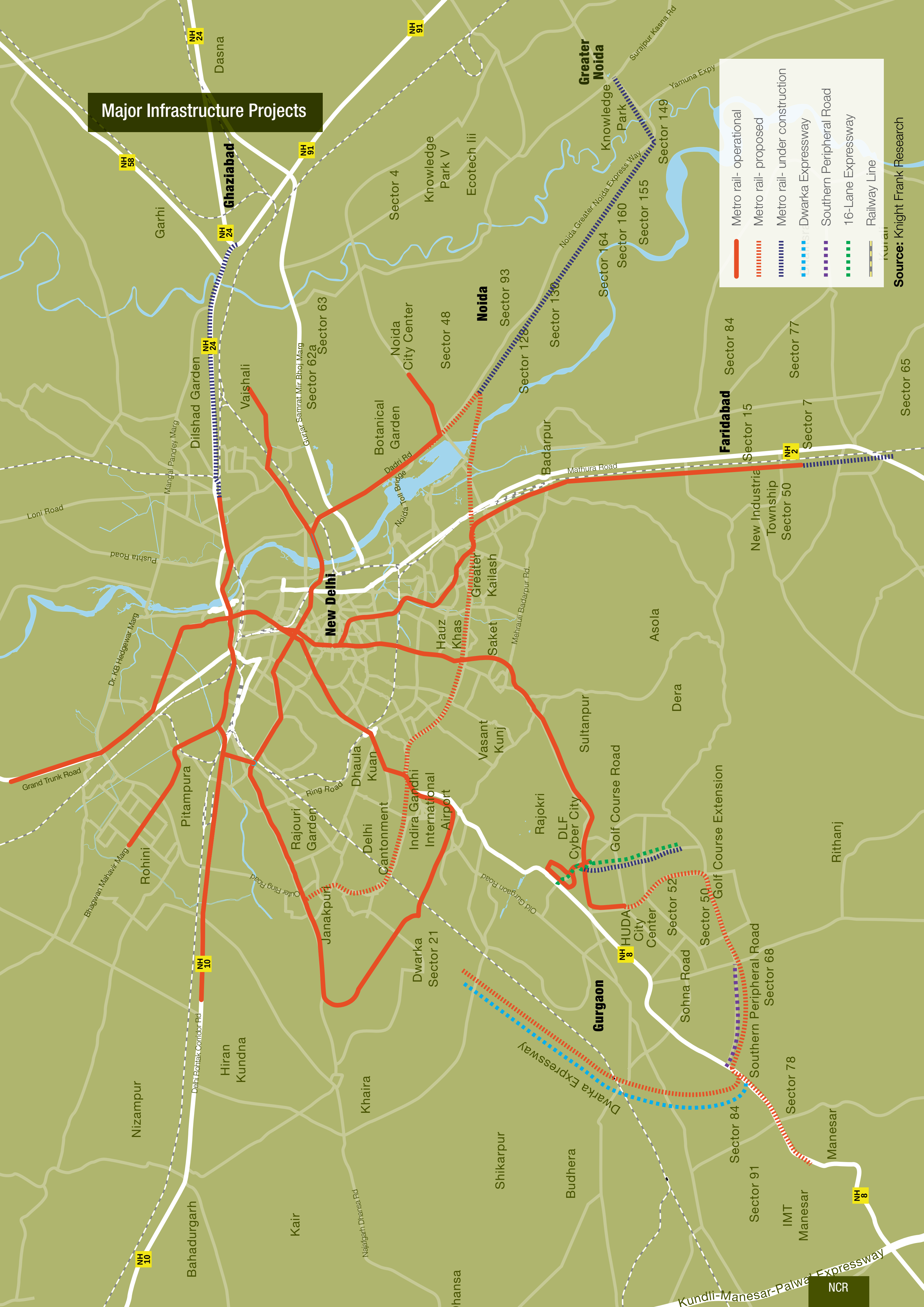
Proximity to the national capital and enhanced connectivity due to the metro line across NCR has positioned it as the most preferred destination for corporations and MNCs to set up their offices.

Chart 1: Distribution of urban population in urban centres of NCR



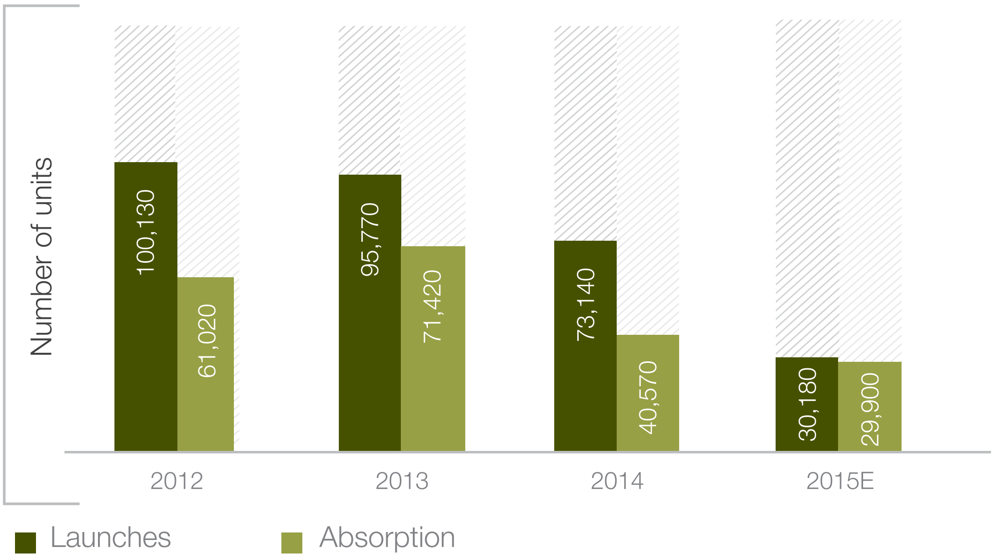
Source: Census of India, 2011

Major Infrastructure Projects



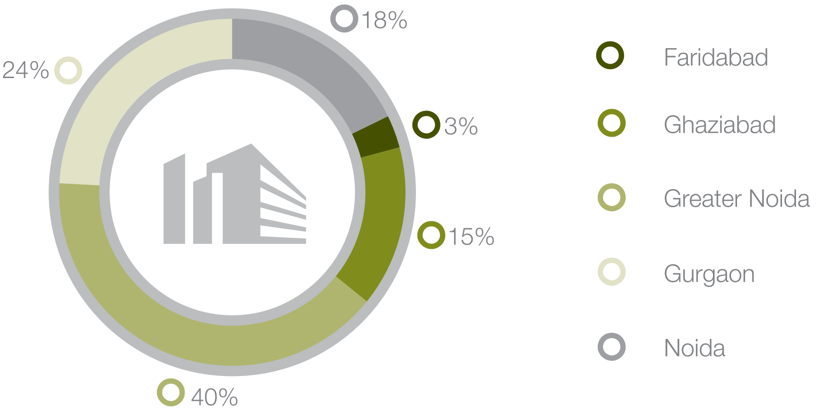
Source: Knight Frank Research

Chart 2: Demand-supply trend in NCR



Source: Knight Frank Research

Chart 3: Zone-wise split of under-construction units



Source: Knight Frank Research

NCR residential market overview

Delhi forms the core of NCR. Being the political hub of India, the capital attracts population from around the country. Strategically located between Punjab and the Gangetic plains, it emerged as an important trade centre and manufacturing hub in North India. But, like any other growing city, Delhi soon saw the emergence of peripheral towns, such as Gurgaon, Noida, Greater Noida, Ghaziabad and Faridabad, which came up as decentralisation nodes for economic activities and as residential alternatives to the growing population base.

Delhi's lateral expansion into the nearby areas opened up new land parcels for development, and soon, NCR became one of the largest office and residential markets of the country.

> The prominence of the main urban centres of the National Capital Region can be gauged from the fact that of the 31 mn total urban population of NCR, 74% is constituted by NCT of Delhi, Gurgaon, Faridabad, Ghaziabad and Gautam Budh Nagar (Noida and Greater Noida)

Zone	Major residential destinations
Delhi	Rohini, Ashok Vihar, Civil Lines, Greater Kailash, South Extension, Hauz Khas, Anand Vihar, Paschim Vihar, Janakpuri, Raja Garden, Tagore Garden, Rajouri Garden, Vasant Vihar, Vasant Kunj, Dwarka, Mayur Vihar, Parparganj
Gurgaon	Golf Course Road, Sohna Road, Golf Course Extension, M.G. Road, NH-8, Dwarka Expressway, Manesar, Dharuhera
Noida/ Greater Noida	Noida, Noida - Greater Noida Expressway
Faridabad	Neharpar, Dayal Bagh Colony, Sainik Colony, Ashoka Enclave
Ghaziabad	Crossings Republik, Indraprastha Yojna, Raj Nagar, Raj Nagar Extension

Delhi

The NCT of Delhi forms the core of NCR and accounts for 53% of its urban population. With an area of 1,483 sq km, Delhi is the political seat of the country and houses many institutional and administrative setups. Based on its geographical location, the city is divided into North Delhi, East Delhi, West Delhi and South Delhi. Being landlocked, Delhi has little scope for expansion, and so, barring a few scattered developments undertaken by private developers, most of Delhi has either grown organically around the old city or its arterial roads, or has been developed by the Delhi Development Authority (DDA).

In terms of office space, Delhi is dominated by the Banking, Financial Services and Insurance (BFSI) sector. Connaught Place forms the city's prime office zone, and is also called its central business district (CBD). As with residential, there is limited growth potential for the office market as well, but it has expanded into areas such as Mohan Cooperative Industrial Estate, Jasola, Aerocity and Vasant Kunj, which together form Delhi's secondary business district (SBD). Though infrastructure initiatives, such as the Delhi Metro, have enhanced the city's connectivity with the rest of the urban centres in NCR and within

> The lack of a self-sustaining service-based economic driver and the industrial tag have slowed the pace of development of the urban centres of Ghaziabad and Faridabad.

the NCT, limited potential for new office and residential space in the NCT puts the zone at a disadvantage. However, being the seat of political power and the core of NCR, Delhi will continue to be a favourite with office occupiers, such as the BFSI sector, wanting to reside close to the capital.

Faridabad

Faridabad is the largest city and a major industrial hub in Haryana. Due to its location on the Delhi - Agra Highway (NH-2), 25 km from Delhi, Faridabad became the favoured location to set up industrial units in Haryana before the emergence of Gurgaon. Growing as an industrial town with a large number of industrial units, Faridabad alone generates about 60% of the state's revenue, and is home to more than 15,000 small, medium and large scale industries.

To boost new residential and industrial development in Faridabad, the Haryana Urban Development Authority (HUDA) incorporated Neharpar or Greater Faridabad in Faridabad under its master plan in 2004 - 2005, in which sectors 66 - 74 are designated as industrial sectors and sectors 75 - 89, as residential sectors. Property rates in Neharpar increased rapidly between 2011 - 2012, due to the announcement and commencement of groundwork on major infrastructure projects, such as the now-operational Delhi Faridabad Skyway at Badarpur, and the recently-operational Delhi metro line to YMCA in Faridabad, along with upcoming projects, such as the Delhi Western Peripheral Expressway (Kundli - Manesar - Palwal (KMP) Expressway) and the Faridabad - Noida - Ghaziabad (FNG) Expressway.

Faridabad has primarily been an end user-driven market, and so this flurry of projects in the recent past and the spike in price appreciation could not sustain due to various reasons, such as the inability of certain anchor developer to deliver on time, the attached premium of infrastructure developments being already factored in, and most important, tepid demand that resulted from a lack of an inherent pull factor.

A very important factor in Faridabad's stagnation despite its close proximity to South Delhi and Gurgaon and a low ticket size is that the region has failed to attract service industries to set up businesses in the area due to the industrial tag. Currently, Faridabad has around 2.5 - 3 mn sq ft of ready office space, which is concentrated around the Delhi - Faridabad border at Badarpur. Till the time Faridabad develops a pull factor in terms of modes of employment other than industry, we estimate a slow movement in its residential sector in this zone.

Ghaziabad

Ghaziabad is a planned industrial town, located 20 km east of Delhi, and is the third most populous district in Uttar Pradesh. With 67% of urban population, Ghaziabad acts as a main entrance to the state of Uttar Pradesh and comes under the Ghaziabad Development Authority (GDA), which is the nodal agency for the overall development of the city. The region has gained prominence due to its proximity to the NCT of Delhi, Noida and Meerut. Predominantly industrial, there is negligible office space in Ghaziabad and the nearest employment hubs are Delhi and Noida.

Two major arterial roads, NH-24 and NH-58, passing through Ghaziabad, provide connectivity with Lucknow and Badrinath, respectively. To decongest the existing highways, the GDA has proposed the widening of NH-24 from the existing four lanes to six lanes, but the project is yet to begin. Its proximity and connectivity to Delhi that initially pushed Ghaziabad's real estate market as an alternative affordable option to Delhi's NCT, catering to the mid- and affordable segments.

Residential clusters, such as Kaushambi, Vaishali and Indirapuram, are the already developed areas, while new supply is seen along NH-24 in areas such as Crossings Republik and Raj Nagar Extension, which have come up during 2004 - 2009.
All these clusters have showed good appreciation during 2011 - 2012 on the back of the mid- and affordable segments, but, just like Faridabad, the lack of a self-sustaining economic driver has slowed their pace compared to other zones, such as Noida in Uttar Pradesh. Further, lack of land options for new planned development, as well as infrastructure and connectivity woes have added to the unattractiveness of the market.

Greater Noida

Greater Noida is a planned town in the Gautam Budh Nagar district of Uttar Pradesh. This 3,800-sq km zone was planned as a satellite town and lies at the intersection of the Western and Eastern Dedicated Freight Corridors, 25 km from Noida. It is also called the gateway to the Delhi-Mumbai Industrial Corridor (DMIC) in the North. Developed by the Greater Noida Industrial Development Authority (GNIDA) since 1991, Greater Noida has emerged mostly as an industrial and education hub, but does not have a concentrated employment magnet; the nearest employment catchments are at Noida and Delhi.

In terms of residential real estate, Greater Noida has always topped the number of new launches in NCR, owing to the abundance of land parcels, which drew developers for business and buyers for affordable housing in NCR. Due to low capital values, the market saw maximum appreciation till 2011 - 2012, post which, it has come to a standstill. Despite the lucrative pricing, many reasons could be cited for the decline of the boom in Greater Noida.

First, certain incidents, such as the 2010 - 2011 land acquisition row in the erstwhile Noida Extension (now Greater Noida West), stalled construction and alarmed buyers. The issue started when the Allahabad High Court nullified the acquisition of land by the Greater Noida Industrial Development Authority/ GNIDA in Shahberi village in Gautam Budh Nagar after being challenged by farmers. The court observed that the land acquisition process was illegal, which put several upcoming projects in the area at risk. The issue was resolved this year (2015), with the Supreme Court upholding the land acquisitions by the GNIDA in Noida Extension between 2006 and 2009.

Second, Greater Noida lacks an employment hub, and its distance and limited connectivity options with the nearest commercial hubs of Noida and Delhi have restricted the growth of this zone. Third, the inability of prominent developers to deliver large township projects and the National Green Tribunal's stay on some areas of Greater Noida West due to pollution this year (2015) are some of the major reasons that have taken steam off from the development pace in Greater Noida.

Going further, infrastructure developments such as the Delhi - Noida Metro Line extending up to Pari Chowk will provide the much-needed alternative connectivity with Greater Noida (other than the now operational Noida - Greater Noida expressway) in the long term, but the intensity of development will increase only once companies start to move into Greater Noida to set up business. The acceptance of Greater Noida among homebuyers will increase once employment centres are established in the region and connectivity with Noida and Delhi improves.

Noida

Noida city is located in the Gautam Budh Nagar district of Uttar Pradesh and is developed by the New Okhla Industrial Development Authority (NOIDA). Spread over 203 sq km, this is one of the prominent real estate zones in NCR due to its excellent connectivity with Delhi, Agra, Faridabad and Ghaziabad. The 165-km Yamuna Expressway provides connectivity with Agra; the eight-lane Delhi-Noida-Direct (DND) Flyway connects Noida with Delhi; the 23-km Noida - Greater Noida Expressway connects these two urban centres; and the upcoming Faridabad - Noida - Ghaziabad (FNG) Expressway will provide improved connectivity between Faridabad and Ghaziabad. Noida has the Delhi Metro facility till the City Centre from Delhi. The metro will expand further to connect Noida to Greater Noida.

Noida was conceptualised to offload the congestion pressure on Delhi, and post its inception in 1976, the city behaved like an industrial hub. It was only in early 2000 that the surge of IT companies changed Noida's landscape, which led to rapid development in terms of infrastructure and real estate. Unlike Faridabad and Ghaziabad, Noida became a self-sustaining satellite town, with IT/ITeS anchoring employment. This anchorage, predominantly from the IT/ITeS sector, benefited the Noida residential market, which saw a healthy price appreciation during 2011 and 2013 on the back of good demand from the mid- to premium segments. However, this self-sustaining urban centre, with good connectivity and infrastructure, has declined due to various reasons.

> “Due to low capital values, Greater Noida saw maximum price appreciation till 2011–2012, post which, it has come to a standstill. The acceptance of Greater Noida among homebuyers will increase once employment centres are established in the region and connectivity with Noida and Delhi improves.”

> “Noida's residential market saw a healthy price appreciation during 2011 and 2013 on the back of good demand from the mid to premium segments. However, this self-sustaining urban centre, with good connectivity and infrastructure, has declined in the last two years.”

In 2013, the NGT issued directions to authorities in Noida to ensure that no construction work was carried out in projects around a 10-km radius of the eco-sensitive Okhla Bird Sanctuary. This move impeded several real estate projects and led to delayed possession and dented buyer sentiment. It was only in early 2015 that the Government of India issued the final notification, re-defining the eco-sensitive zone (ESZ) around Okhla Bird Sanctuary and limited its radius to 1 km. Other incidents, such as the Noida Development Authority's reprimand to certain developers over the flouting of guidelines and the recent communal violence in nearby Dadri, have collectively dampened homebuyer sentiment.

> With 53% of NCR's office stock, Gurgaon is a pronounced IT/ITeS outsourcing and offshoring hub in the world. As a rub-off effect of this preference, residential prices in Gurgaon grew at a 13% CAGR in 2010–2012.

Gurgaon

Like Noida, the urban centre of Gurgaon emerged as a self-sustaining city. With a total area of 1,258 sq km, Gurgaon is strategically located 30 km south - west of Delhi and offers fast and speedy connectivity to other parts of NCR. The Haryana Urban Development Authority (HUDA) developed Gurgaon in sectors, and, like any other town, Gurgaon started to grow around its railway stations and arterial roads. With improved infrastructure and connectivity, new land parcels opened up in and around Gurgaon, witnessing increased interest from the residential real estate sector. Factors such as the availability of huge land parcels, proximity to the international airport, in Delhi, favourable tax policies and faster implementation of infrastructure projects contributed to Gurgaon's growth, in terms of both, residential and commercial real estate. With 53% (70 mn sq ft) of NCR's office stock, Gurgaon is not only the financial centre of Haryana but also one of the most pronounced IT/ITeS outsourcing and offshoring hubs in the world. Being the commercial hub of NCR and a location of choice for MNCs, Gurgaon saw an increase in population and per capita income, which created a huge demand for housing, resulting in escalating property prices in recent years. This ripple effect caused residential prices in Gurgaon to grow at 13% CAGR in 2010 - 2012, and the urban centre became the most unaffordable in NCR, unlike other satellite towns such as Noida. As a result, property in Gurgaon became costlier than its peer employment hub - Noida.

However, like other urban centres in NCR, prices in Gurgaon have muted since 2013, owing to the overall slowness in the economy, its unaffordability and also due to certain lags on the part of the developers and the government. One of the major infrastructure projects that got mired in litigation was the Northern Peripheral Road (NPR / Dwarka Expressway). This 18-km expressway was planned as an alternative link road between Delhi and Gurgaon, and is expected to ease traffic on the Delhi - Gurgaon Expressway (NH-8). Land for the road was acquired in 2007 - 2008, but in 2008, writ petitions were filed, challenging the acquisition, and the road could be developed only in patches. Though the rest of the NPR is now litigation free, the delay and patchy completion tarred Gurgaon's image, since the road itself was to be backbone of development in the area.

Table 2: Existing arterial road network

Urban centres of NCR	Road network	Length	Description
Road Network			
Gurgaon	Delhi - Gurgaon Expressway	28 km	Operational since 2008, this eight-lane controlled-access toll expressway along NH-8 connects Gurgaon and Delhi. Beginning at Dhaula Kuan in Delhi, the expressway terminates at Manesar, on the outskirts of Gurgaon
Noida	Delhi - Noida-Direct (DND) Flyway	9 km	Operational since 2001, this eight-lane controlled-access toll expressway provides connectivity between Delhi and the satellite city of Noida
Greater Noida	Yamuna Expressway	165 km	Operational since 2012, this six-lane expressway, connecting Greater Noida and Agra, commenced operation in August 2012. The controlled-access toll expressway is a better alternative to NH-2, which handled all the Agra-bound traffic from NCR earlier
Noida/ Greater Noida	Noida - Greater Noida Expressway	25 km	This is a six-lane expressway that provides connectivity between the two satellite cities of NCR, i.e. Noida and Greater Noida
Delhi	NH-1	22 km	NH-1 is over 450 km long, primarily connecting Delhi and Attari in Punjab. Of this, only 22 kms forms a part of Delhi. This entire stretch is an eight-lane highway. It starts from Singhu Border in the northern district of Delhi and terminates at ISBT Kashmiri Gate
Faridabad	NH-2 (Delhi - Mathura Road)	12 km	NH-2 is a 1,465-km highway, providing connectivity between Delhi and West Bengal. The 12-km stretch in Delhi that forms part of NH-2 is called the Delhi–Mathura Road. It connects Delhi with Mathura via Ashram Chowk
Delhi	NH-10	18 km	NH-10 is a 403-km highway that provides connectivity between Delhi and the Fazilka district of Punjab. Starting from the CBD of Delhi, the 18-km stretch of NH-10 terminates at Tikri Kalan, near the Haryana - Delhi border
Delhi - Gurgaon	Mehrauli - Gurgaon Road	19 km	A 19-km stretch along NH-236 connects Mehrauli (South Delhi) with the Gurgaon city centre
Delhi - Gurgaon	Old Delhi - Gurgaon Road	5 km	Starting from Samalkha Crossing in New Delhi, this 5-km road runs parallel to the Delhi - Gurgaon Expressway (NH-8), providing connectivity between the two cities
Gurgaon/ Faridabad	Gurgaon - Faridabad Road	25 km	A 25-km toll highway, starting from Gurgaon's Mehrauli Road in Sikanderpur and ending at the junction of Pali Bhakri Road in Faridabad, has been built by widening the existing two-lane road to four lanes
Faridabad - Sohna	Ballabhgarh - Sohna Road	28 km	This two-lane, 28-km toll highway connects Faridabad and Sohna - the two major cities of Haryana. It starts from Ballabhgarh and ends at Rewari - Palwal
Delhi - Faridabad	Delhi - Faridabad Skyway	4.4 km	This tolled, six-lane expressway on NH-2 provides connectivity between Delhi and Faridabad

Source: Knight Frank Research

Table 2: Existing metro network

Metro train network	Length	Description
Metro network		
Delhi Metro	190 km	This well-connected, Mass Rapid Transit System (MRTS) is laid across NCR
Delhi Airport Metro Express (DAME)	22 km	This is a part of the Delhi Metro line, starting from New Delhi to Dwarka Sector 21 metro station, connecting the city centre with Indira Gandhi International Airport
Rapid MetroRail Gurgaon (RMRG) - Phase I	6.1 km	This intra-city metro line connects the existing Sikanderpur metro station with NH-8. It provides the much needed access to DLF Cyber City
Badarpur - Faridabad Metro Corridor	14 km	This corridor is an extension of the existing Central Secretariat–Badarpur metro line. Extending up to YMCA Chowk, there are nine stations on this corridor

Source: Knight Frank Research

Table 3: Upcoming infrastructure

Project	Length	Description	Current status	Expected completion
Road and Metro network				
Kundli - Manesar - Palwal (KMP) Expressway	136 km	This controlled-access expressway will connect Kundli with Palwal via Manesar in Haryana. It will also connect important industrial centres in Haryana, and intersect four of India's busiest national highways: NH-1 near Kundli (Sonipat), NH-10 near Bahadurgarh, NH-8 at Manesar (Gurgaon) and NH-2 near Palwal (Faridabad)	The Kundli - Manesar section (83.3 km) of the project was awarded in July 2015	2018
Dwarka Expressway	18 km	Dwarka Expressway is an eight-lane road, providing the shortest alternative between the new growth centres of Delhi and Gurgaon. Starting from Dwarka, it will connect Palam Vihar and the forthcoming SEZs in Gurgaon to join NH-8 near Kherki Dhaula	Litigation resolved	2016 - 2017
Southern Peripheral Road (SPR)	14 km	This 90-m wide road will connect Gurgaon and Manesar with South Delhi through M. G. Road and the Faridabad Highway. It will connect with NH-8 about 1 km before the Kherki Dhaula toll plaza. The SPR has acquired the status of 'National Highway' and has been allotted number 236	Under construction	2016 - 17
Faridabad - Noida - Ghaziabad (FNG) Expressway	56 km	This expressway will connect Faridabad, Noida and Ghaziabad. An 8-km stretch, out of the 16 km that fall under the jurisdiction of Noida Authority, is complete	Under construction	Beyond 2020

Table 3: Upcoming infrastructure

Name	Legnth	Description	Current status	Expected completion
16-lane Expressway in Gurgaon	8.3 km	This 8.3-km, 16 - lane, signal-free expressway will span between the Gateway Tower on NH-8 and Golf Course Extension in Gurgaon	Under construction	2017
Ghaziabad (Nizamuddin - Dasna Expressway)	50 km	This is a proposed 14-lane road from Nizamuddin Bridge to Dasna (28 km). The 22-km stretch of the Dasna - Hapur portion of the highway would be widened to six lanes	Tenders floated as of 2015	Beyond 2020
Noida - elevated corridor	5 km	This would be a 6-lane, elevated, signal-free corridor between Sector 41 and SEZ II that connects Greater Noida and Dadari	Detailed project report stage	Beyond 2020
Noida - Greater Noida Metro	30 km	Starting from Noida City Centre in Sector 32, the proposed metro corridor will lead towards Greater Noida	Work in progress since June 2015	2018
Rapid Metro Rail Gurgaon (RMRG) - Phase II	7 km	A 7-km extension of the Rapid Metro Rail Gurgaon (RMRG) Phase I has been proposed. It will provide connectivity between Sikanderpur and Sector 55 - 56 in South Gurgaon	Under construction	2016
Gurgaon - Manesar metro		The existing Delhi - Gurgaon Metro Link is proposed to be extended up to Manesar via sectors 43 - 44, 52 - 52A, 56 - 57, Golf Course Extension, Southern Peripheral Road (SPR) and NH-8	Proposed in Master Plan 2031	Beyond 2020
Mass Rapid Transit System corridor		The Metro along the Dwarka Expressway has been proposed up to the Inter State Bus Terminal proposed near village Kherki Duala (toll)	Proposed in Master Plan 2031	Beyond 2020

Source: Knight Frank Research

2.

Top investment destinations

What drives the NCR residential market?

The urban centres of NCR, namely NCT Delhi, Gurgaon, Noida, Greater Noida, Faridabad and Ghaziabad, together constitute 60% of the total 3,768 sq km of the urban area of NCR and 74% of the total urban population. Starting off as satellite towns to decongest Delhi, some of these urban centres slowly developed into self-sustaining nodes of employment and began offering residential options to people wanting to reside close to their workplaces.

The vast price range in NCR bears testament to the pull factor of these zones, which is reflected in the high price gradient of NCR (Refer - Map of NCR with price range). Existing and proposed infrastructure, employment opportunities, distance and connectivity from employment centres, affordability and availability of residential options, and social infrastructure are all important factors that have impacted the profile and, in turn, the residential pricing of the six urban centres in NCR.

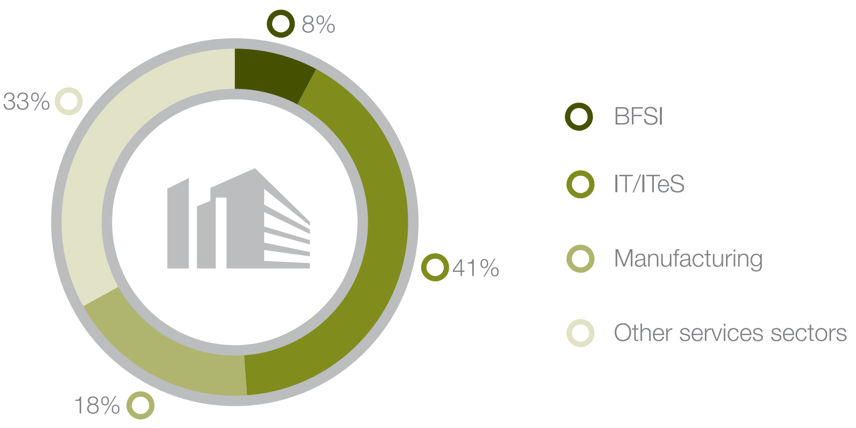
Residential demand in NCR is driven primarily by job creation, supporting infrastructure and fast connectivity. The economy is driven by multiple industries - primarily manufacturing, IT/ITeS, small and medium enterprises, banking and financial services, and consulting. As the national capital, Delhi attracts the BFSI sector, while Faridabad and Ghaziabad are perceived to be manufacturing and industrial towns, and Noida and Gurgaon are driven by the IT/ITeS sector.

However, over the past few years, the IT/ITeS and the other services sectors emerged as the largest employers in NCR, thereby evolving as the biggest drivers of the city's real estate market, which is evident from the year-on-year absorption trends. With a current office stock of 132 mn sq ft and a vacancy of 20.7%, the office market of NCR is second only to Bangalore. Since the NCT of Delhi lacked quality office spaces with large floor plates and associated infrastructure facilities, the peripheral business districts of Noida and Gurgaon attracted corporate and IT/ITeS companies.

Apart from major occupier industries, such as IT/ITeS and manufacturing, companies from the other services sector, such as media, consulting and ecommerce, have also taken up large floor spaces in NCR in recent years. Witnessing fast-paced growth, the sector made a threefold jump in the total transacted space in the first half of 2015, with Gurgaon being the location of choice. Quality office spaces with associated infrastructure are driving the leasing activity in Gurgaon, making it a preferred office address for occupiers, especially corporates.

> “Employment opportunities, supporting infrastructure and fast connectivity drive the residential prices in NCR. The price gradient bears testament to the attractiveness of the six urban centres amid homebuyers.”

Chart 4: Sector-wise split of office space in NCR



Source: Knight Frank Research

Which regions in NCR will dominate the real estate landscape

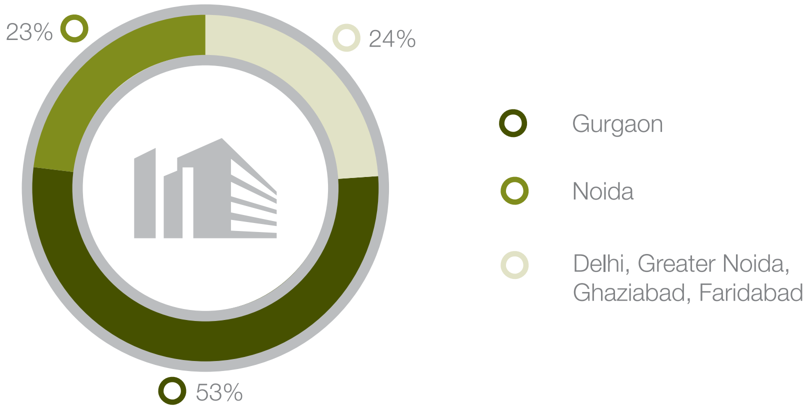
With six urban centres, the real estate landscape of NCR is dynamic in nature. Being the seat of political power and the core of NCR, the NCT of Delhi will continue to be a favourite among office occupiers who want to reside close to the capital, such as the BFSI sector. The area is densely populated, with limited scope for new supply, rendering prices in the area unaffordable.

Ghaziabad, like the NCT of Delhi, is land locked, which leaves limited scope for expansion. With most of the residential developments coming up along NH-24, this area is in dire need of good connectivity. We do not see incremental employment or residential demand being triggered by Ghaziabad in the next few years.

Despite having good connectivity with Delhi and the Gurgaon residential market, Faridabad has a slow pace of development due to the industrial tag, since jobs in the industrial and manufacturing sectors will not be able to sustain the residential development due to limited affordability. Even though Faridabad is well connected to Gurgaon through the Faridabad - Gurgaon Expressway, it takes the same travel time from Faridabad to reach employment hubs in Gurgaon as from certain discounted locations within Gurgaon. Further, since the price appreciation due to infrastructure developments, such as the recently - operational metro, has already been factored in, price growth in Faridabad will be muted, and till the time Faridabad generates an inherent service base to create and sustain demand, its attractiveness will be low.

This leaves us with peripheral locations such as Gurgaon and Noida, which will be magnets for employment and infrastructure in NCR, going forward. Their prominence is evident from the fact that 75% of the current office stock of NCR is concentrated in these two micro-markets. They boast good connectivity and infrastructure, which have attracted occupiers to set up base there. This white-collar employment creation has generated a huge demand for residential spaces in these urban centres, and based on the upcoming infrastructure developments and incremental job creation, we do not foresee these dynamics changing over the next five years. The biggest challenge faced by these two urban centres is the stigma due to delayed project deliveries and delays in the infrastructure project completion due to litigations.

Chart 5: Distribution of office space in NCR



Source: Knight Frank Research

> Gurgaon and Noida have emerged as magnets for employment and infrastructure in NCR. Their prominence is evident from the fact that 76% of the current office stock of NCR is concentrated in these two micro-markets.

> Noida's disadvantage as a corporate location of choice stems from its widely distributed commercial buildings and its distance from the international airport. Thus, price appreciation in Noida's residential market due to the employment pull factor is distributed.

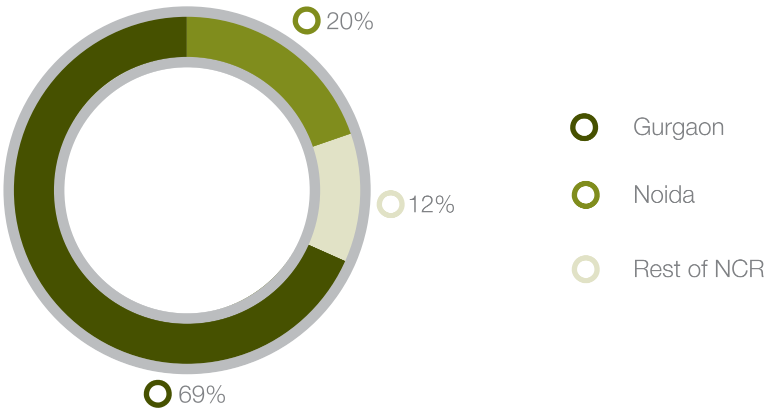
Why will residential prices in Noida grow at a slower rate than Gurgaon?

Noida currently accounts for 23% of the total office space stock (Chart 5) in NCR. This stock is mostly segregated across sectors and does not form a continuous corridor of commercial space like in the case of Gurgaon. Due to low rentals in the range of ₹40 - 60 per sq ft and ample availability of vacant land, Noida attracted large IT/ITeS companies, such as CSC, TCS and HCL in the past, but that upside due to employment creation has already been factored in. It is observed that the office space demand in Noida has stagnated in the last two years despite it being more affordable than Gurgaon. The majority of the office space in Noida is IT/ITeS-driven, unlike Gurgaon, which has a mix of corporate and IT/ITeS occupiers.

Noida's disadvantage as a corporate location of choice stems from its widely distributed commercial buildings and its distance from the international airport. Additionally, the approximately 8 - 9 mn sq ft of incremental office space that is expected to come up in Noida by 2018 is also spread across various sectors and does not benefit any particular residential area or corridor. Real estate projects launched along the Noida - Greater Noida Expressway will only pick up steam once this urban centre has developed alternative modes of connectivity with Greater Noida other than the existing Noida - Greater Noida Expressway. In this regard, the Noida - Greater Noida Metro link will be an attraction for companies looking to set up base in this belt, since it will provide an alternative mode of travel for the workforce. However, nothing can be estimated until some groundwork takes place.

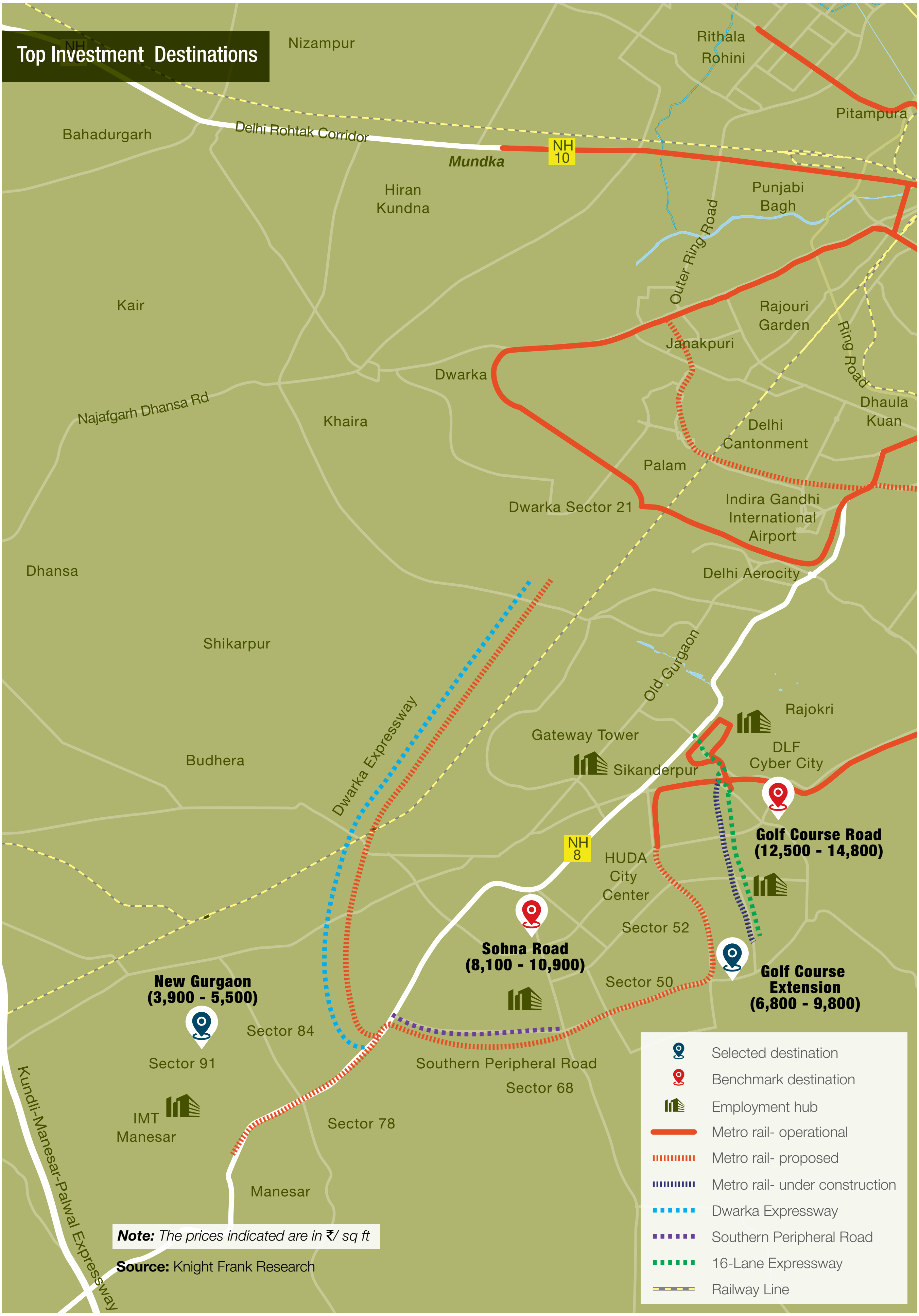
Prices run in the range of ₹3,900 - 5,900 per sq ft across Noida and the Noida - Greater Noida Expressway. However, proximate urban centres, such as Greater Noida and Ghaziabad, which have low prices, will keep the pressure on Noida's price appreciation and could limit the upside potential of prices. Certain pockets in Ghaziabad and Greater Noida provide discounted options to homebuyers working in Noida within a commutable distance of 20 - 30 minutes. However, these market discounts are due to project delays and infrastructure woes. The incremental office supply in Noida in the coming years is not seen to benefit any particular residential corridor or area, as it is scattered across various sectors. Thus, price appreciation in Noida's residential market due to the employment pull factor will be distributed.

Chart 6: Share of office space absorption in NCR



Source: Knight Frank Research

Top Investment Destinations



***Note:** The prices indicated are in ₹/ sq ft*

Source: Knight Frank Research

> Gurgaon's pull of the current and incremental office space and infrastructure gives it an edge over Noida. Approximately 13 mn sq ft of incremental office space is expected to come up in Gurgaon by 2018, which translates into 130,000 jobs.

On the other hand, Gurgaon has 53% of the 132 mn sq ft of office stock in NCR, which is spread across DLF Cyber City, Udyog Vihar, Golf Course Road, Golf Course Extension Road and Sohna Road. The resultant increase in the employee base brought in a huge demand for homes and eventually saw Gurgaon evolve into one of the established residential markets in NCR. This attractiveness has put a pressure on prices in Gurgaon, which run in the range of ₹4,200 - 24,000 per sq ft - the highest in NCR other than the NCT of Delhi.

Though prices in Gurgaon are higher than the rest of NCR, it is the pull of the current and incremental office space and infrastructure that gives it an edge over Noida. Approximately 13 mn sq ft of incremental office space is expected to come up in Gurgaon by 2018, which translates into 130,000 jobs, of which 69% jobs or 9 mn sq ft will be spread across Golf Course Extension and the southern part of Dwarka Expressway or New Gurgaon. Unlike Noida, new supply of office space in Gurgaon is concentrated in a few select areas and hence, residential markets in close proximity to these office hubs will benefit the most from high demand by homebuyers.

The infrastructure push to Gurgaon's development will now be the litigation-free 18-km Dwarka Expressway (Refer to Table - 1), which will provide the much-needed alternative connectivity between Delhi and Gurgaon. The under-construction 16-lane, signal-free Gurgaon Expressway and Phase 2 of the Rapid MetroRail Gurgaon (RMRG) on Golf Course Road are other important infrastructure initiatives that will impact the real estate scenario in Gurgaon's corridors and whose progress can be tracked on the ground.

Other upcoming infrastructure, such as the proposed extending of the existing Delhi - Gurgaon Metro Link up to Manesar via sectors 43 - 44, 52 - 52A, 56 - 57, Golf Course Extension, SPR and NH-8 and the proposal of a Mass Rapid Transit System Corridor along Dwarka Expressway up to the Inter State Bus Terminal proposed near village Kherki Duala (toll) is being seen as a catalyst for making Gurgaon a preferred zone for business in NCR.

Certain residential corridors within Gurgaon will benefit more from the incremental office supply and infrastructure developments. These corridors will gain either from their proximity to the employment hubs or from upcoming infrastructure developments, connecting them to other parts of Gurgaon and making them attractive to homebuyers.

Investment destination 1: Golf Course Extension

Golf Course Road is the most premium and sought-after residential area in Gurgaon, with current prices between ₹12,500 - 14,800 per sq ft. Factors such as faster connectivity and proximity to DLF Cyber City, well-established social and physical infrastructure, limited availability of land for further development and upcoming infrastructure, such as the extension of the RMRG to the 16-lane expressway have made this location a prime address in Gurgaon. A ripple effect of this development will be seen on the markets close to Golf Course Road, making it our benchmark destination for our investment destination of Golf Course Extension Road. Golf Course Extension includes sectors 58 - 67 and runs from Ghata Village to Badshahpur Village. By virtue of being close to Golf Course Road, a rub-off effect in prices will be witnessed by Golf Course Extension Road.

Table 4: Connectivity with important locations:

Locations	Approx. distance from sector 50 (Km)
M. G. Road	13
Golf Course Road	10
Sohna Road	7
DLF CyberCity	17 (via Golf Course Road)
Gurgaon - Faridabad Expressway	6
IGI Airport	25
Udyog Vihar	15
Manesar	28

Source: Knight Frank Research

What are the drivers of Golf Course Extension?

Being at the centre of Golf Course Road and Sohna Road, this stretch borrows more from the pricing and lifestyle of Golf Course Road than the latter. Golf Course Extension is a 15 - 20 drive from the employment hubs of Sohna Road and Golf Course Road. It joins Sohna Road or NH-248A and meets NH-8 at one end, and Golf Course Road connecting to DLF CyberCity and the Gurgaon - Faridabad Expressway at the other. The upcoming 8.3-km, 16-lane expressway that joins NH-8 to sectors 55 - 56 on Golf Course Road will not only connect Golf Course Extension to Golf Course Road and DLF CyberCity but also provide speedy connectivity between these corridors. The travel time between Golf Course Extension and DLF CyberCity will reduce by half with the completion of the this signal-free expressway, benefitting homebuyers in this belt.

Another important infrastructure push for Golf Course Extension is the linking of the rapid metro to sectors 55 - 56. A 7-km extension to the RMRG Phase I has been proposed. This will provide connectivity between the retail and office markets of M. G. Road, starting from Sikanderpur on M. G. Road and ending at sectors 55 - 56 on Golf Course Road. Not only does Golf Course Extension have a robust, visible infrastructure pipeline that will get delivered in the next two years, it also boasts strong, planned infrastructure developments, such as the proposal of extending the existing Delhi - Gurgaon Metro Link to Manesar, which will pass through Golf Course Extension Road.

This corridor will also be the next commercial corridor, after DLF CyberCity and Golf Course Road, in terms of good quality commercial spaces. Gurgaon has a tenant mix of IT/ITeS and corporate occupiers; however, the demand for commercial office space has picked up recently. Since commercial office spaces in DLF CyberCity and Golf Course Road are either nearing single-digit vacancy or commanding high rentals, Golf Course Extension is seen as the natural extension of these office markets.

> “Golf Course Extension is poised to be a natural extension of the premium Golf Course Road. The infrastructure push, reduction in travel time and a strong, existing and incremental office space pipeline are set to make this corridor an alternative residential destination for homebuyers.”

This corridor is not only close to the employment hubs of Gurgaon, such as Sohna Road and DLF CyberCity but also has approximately 3 mn sq ft of ready office space of its own, with another 5 - 6 mn sq ft under construction. Leasing activity in the corridor will pick up with the completion of the 16-lane expressway and metro connectivity, which will improve the sentiments of the area and boost residential demand. Thus, infrastructure push, reduction in travel time and a strong, existing and incremental office space pipeline make Golf Course Extension an alternative residential destination for homebuyers who cannot afford the residential prices in Golf Course Road.

How would the drivers pan out on residential property prices Golf Course Extension?

Golf Course Road has been considered a benchmark location for Golf Course Extension Road. As a residential catchment, Golf Course Road has now stabilised, with prices in the range of ₹12,500 - 14,800 per sq ft. In the selected destination of Golf Course Extension, prices are in the range of ₹6,800 - 9,800 per sq ft, depending on the type of project, location and frontage along the road. At an average price of ₹8,300 per sq ft, residential property in our selected corridor trades at a discount of 39% from the average price of ₹13,600 per sq ft price prevailing in the benchmark location.

With the infrastructure push via the completion of the 16-lane expressway by the end of 2016, and the movement of offices towards Golf Course Extension, we estimate this discount to narrow down from 39% to 27%. For Golf Course Extension, this will translate into a price movement from the current ₹8,300 per sq ft to ₹11,800 per sq ft - an appreciation of 42% during the next five years.

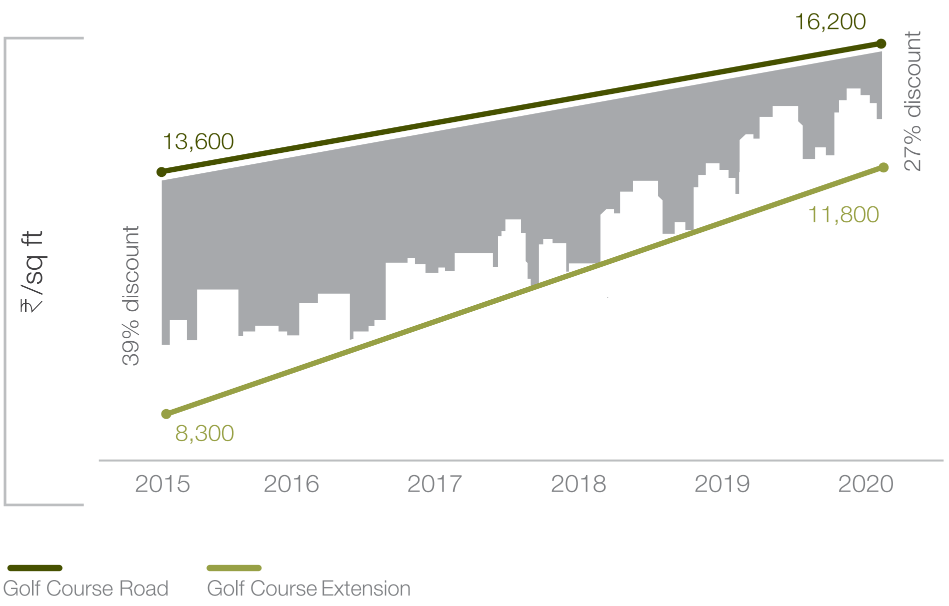
Table 5: Price movement in the benchmark location and investment destination of Golf Course Extension

	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020E	Avg. annual	2015	2020E
Golf Course Road (benchmark location)	12,500	14,800	13,600	14,800	17,600	16,200	19%	3.50%		
Golf Course Extension (top destination)	6,800	9,800	8,300	9,700	13,900	11,800	42%	7.20%	39%	27%

Note: *The price growth and discount from 2015 to 2020 is calculated on the average price of that location*

Source*:* Knight Frank Research

Chart 7: Price movement in Golf Course Extension



Source: Knight Frank Research

> With the infrastructure push via the completion of the 16-lane expressway, and the movement of offices towards Golf Course Extension, we estimate the current discount to narrow down from 39% to 27% in the selected destination of Golf Course Extension

Is there a precedent to such a trend?

Golf Course Road is now a stable market that has appreciated significantly in the past. The 7-km corridor saw price appreciation due to the presence of premium projects, and its proximity to the office hub of DLF CyberCity and the retail corridor of M. G. Road located within a driving distance of 15 - 20 minutes. The road is dotted with good quality commercial buildings, which, though scattered, provide for quality office space that matches the needs of corporate occupiers willing to pay uphill rentals. The Gurgaon - Faridabad Expressway can be accessed within 10 minutes through various entry points from Golf Course Road. Due to pronounced social and physical infrastructure, and excellent connectivity with Delhi and other parts of Gurgaon, residential property prices in Golf Course Road appreciated by 60% from 2007 - 2012 and moved from 6,600 per sq ft to ₹10,600, with a CAGR of 9.9%.

Investment destination 2: New Gurgaon (sectors 81-95)

New Gurgaon is the upcoming residential hub along NH-8 that forms the southern side of Dwarka Expressway. The corridor is called New Gurgaon because it is seen as a lateral extension of Gurgaon. The influence of New Gurgaon extends to both sides of NH-8 on crossing the toll at Kherki Daula, but we see sectors 81 - 95 spearheading the upside in the coming five years.

Table 6: Connectivity from New Gurgaon

Locations	Approx. distance (Km)
Sohna Road	16
Golf Course Extension	20
Golf Course Road	22 via NH-8
DLF CyberCity	22
Gurgaon–Faridabad Expressway	24
IGI Airport	31
Udyog Vihar	24
Manesar	10

Source: Knight Frank Research

> New Gurgaon is the nearest upcoming residential area to the established Sohna Road and has a mix of residential projects, with properties ranging from the affordable and mid- segments to the premium segment.

What are the demand drivers in New Gurgaon?

New Gurgaon falls on the southern side of Dwarka Expressway, which will provide better connectivity and infrastructure once it is fully operational. Though delayed by litigations, Dwarka Expressway has now been cleared of all matters by the Punjab and Haryana high courts, and we foresee that it will be fully delivered before the 2020 horizon. Once it is fully operational, commuters will be able to reach Kherki Daula from Dwarka in Delhi in just 20 - 30 minutes, after which they can commute seamlessly to the industrial hubs of Manesar and Dharuhera. However, we foresee that the southern belt of the expressway or New Gurgaon (sectors 81 - 95) will pick up faster than the northern sectors (103 - 118).

There are various reasons for the southern belt of the expressway to appreciate faster than the northern sectors. The alignment of the 1.8-km Dwarka Link Road in the north, which will join Dwarka to the expressway and provide the critical direct connectivity, has only been cleared in 2014. We believe that the process will be delayed, since it involves land acquisition. On the other hand, New Gurgaon is located at a commutable distance of 30 - 40 minutes from the well-established commercial corridors of Sohna Road, DLF CyberCity and Golf Course Road through well-laid internal roads, NH-8 and Golf Course Extension Road.

In terms of incremental office space, though the area has approximately 3 mn sq ft of upcoming office space, we do not see this corridor becoming a self-sustaining employment hub in the coming years. However, New Gurgaon is positioned to emerge as a relatively affordable residential catchment within Gurgaon. The area is set to attract homebuyers looking for good residential options within the city.

How would the drivers pan out on residential property prices in New Gurgaon?

Sohna Road, or NH-248A, is a residential corridor in Gurgaon and has been considered as a benchmark location for the New Gurgaon. This 6-km corridor is a well-established market, located a 20-minute drive from New Gurgaon. Sohna Road bisects further from Badshahpur, from where it connects to the upcoming office and residential area of Golf Course Extension Road and the premium residential hub of Golf Course Road, which are within a driving distance of 30 - 40 minutes. The corridor boasts wide roads and has also emerged as a well-developed retail and entertainment hub in the last few years.

This infrastructure development, along with limited availability of vacant land, has led prices in Sohna Road to run in the range of ₹8,100 - 10,900 per sq ft.

New Gurgaon is the nearest upcoming residential area to Sohna Road that has a mix of residential projects with properties ranging from the affordable and mid-segment to premium segment.

With prices in the range of ₹3,900 - 5,500 per sq ft, depending on the type of project and its location and frontage on NH-8, New Gurgaon is set to attract homebuyers. The selected area has approximately 56,000 units, of which 62% are under various stages of construction. This means that the area has a number of fresh inventory options for buyers to choose from. At an average price of ₹4,700 per sq ft, residential property in our selected corridor trades at a discount of 51% from the ₹9,500 per sq ft price prevailing in the benchmark location.

With the completion of Dwarka Expressway within our investment horizon, the movement of the Kherki Daula toll, and the opening up of the Southern Peripheral Road from NH-8 towards Golf Course Extension Road, we estimate this discount to narrow down from 51% to 42%. For New Gurgaon, this will translate into a price movement from the current ₹4,700 per sq ft to 6,900 per sq ft - an appreciation of 47% during the next five years.

Table 7: Price movement in the benchmark location and investment destination of New Gurgaon

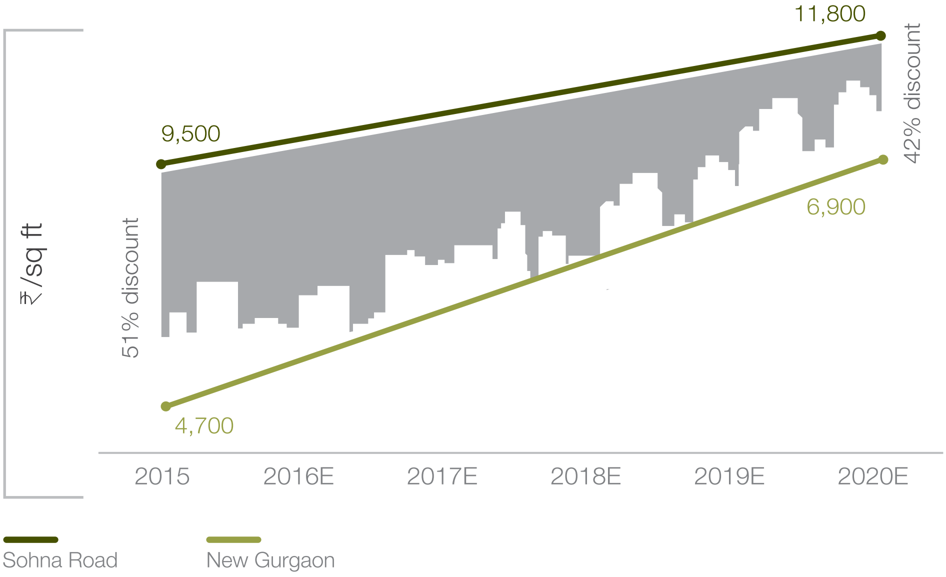
	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020E	Avg. annual	2015	2020E
Sohna Road (benchmark location)	8,100	10,900	9,500	10,100	13,600	11,800	24%	4.40%		
New Gurgaon (sectors 81 - 95) (top destination)	3,900	5,500	4,700	5,700	8,100	6,900	47%	7.9%	51%	42%

Note: *The price growth and discount from 2015 to 2020 is calculated on the average price of that location*

Source: Knight Frank Research

> With the completion of Dwarka Expressway, and the opening up of the Southern Peripheral Road from NH-8 towards Golf Course Extension Road within our investment horizon, we estimate the discount to narrow down from 51% to 42% in New Gurgaon.

Chart 8: Price movement in New Gurgaon



Source: Knight Frank Research

Is there a precedent to such a trend?

Sohna Road is the nearest established micro-market to new Gurgaon, with prices running in the range of ₹8,100 -₹10,900 per sq ft. The road has seen good traction in the past years by virtue of being an alternative affordable office destination to DLF CyberCity. The year 2013 - 2014 saw many companies, especially IT-driven businesses, moving their base from DLF CyberCity because of high rents. Office spaces in Sohna Road offered large contiguous floor plates, with rents in the range of ₹30 - 40 per sq ft. As the office market expanded from DLF Cyber City to Sohna Road, the demand for residential properties in the area led to an increase in residential prices in the past few years. It is seen that residential property prices in Sohna Road appreciated by more than 100% from 2007 - 2012 and moved from 3,600 to 7,300 with a CAGR of 15.2%.

3.

Review of the previously-recommended investment destinations

The previously recommended investment destinations of Dwarka Expressway (sectors 103–113) and Noida Extension in NCR have performed below our expectations in terms of price appreciation till 2015. In 2012, we had projected a five-year price growth in the range of 108% to 111% for theserespectivemarkets. However, in the first three years of our projected time horizon, prices increased in the range of 12% to 6%, which is considerably less than our initial estimates. Infrastructure delays, litigations, developer delays and the overall slowdown of the NCR market have significantly wedged the growth of the previously recommended destinations.

Dwarka Expressway (sectors 103 - 118)

The delay in thecompletion of the Dwarka Expressway heavily impacted the growth of the northern sectors (103–118). These sectors attracted higher premiums due to theirproximity to Dwarka Sub-City, Delhi International Airport and the proposed diplomatic enclave in Dwarka Phase II, and it is this upcoming infrastructure and the excellent connectivity to Delhi that led to keen interest in the market. However, the delay in completiondue to litigations faced on a 2-km stretch of the 18-km expressway dampened market sentiments. Further, work on the the 70-acre diplomatic enclave proposed by the DDA is yet to begin.

The enclave, when developed, will house embassies and provide a lifestyle shift to the area. Even though trunk infrastructure on the allocated area is nearly complete, the delay in allotments is holding back development. Since connectivity and a lifestyle shift were the growth drivers in the recommended sectors, delays in their completion impeded the price appreciation. Going forward, along with the commencement of work on the diplomatic enclave, the completion of the 1.5-km Dwarka Link Road, which will provide direct connectivity from Dwarka to Dwarka Expressway, will be critical for the growth of the northern sectors. Based on these factors, we foresee that price appreciation will remain tepid in the northern sectors of the Dwarka Expressway.

Noida Extension, Noida

Noida Extension (now Greater Noida West) comprises Sectors 1, 2, 4, 16B, 16C, 16D and Knowledge Park V, and has emerged as an affordable residential destination in NCR. However, factors such aslitigations, project delays and lack of connectivity havehampered the growth of Greater Noida West. This destination witnessed healthy sales in 2010, primarily due to its proximity to Noida and its affordable pricing; however,there was a dip in sales due to the land acquisition litigation of 2010–2011. The dip was seen as an aberration in a promising, affordable market, and we anticipated a speedy resolution tothe issue. However, the resolution faced a massive two-year delay, and it was only in 2015 that the Supreme Court issued a judgement upholding GNIDA's land acquisitions in Noida Extension between 2006 and 2009.Today, Noida Extension bears the brunt of that delay, which has led to delays in project deliveries due to intermittent, stalled construction. This, in turn, has also impacted the completion of social and physical infrastructure in that area. Since appreciation due to the initial low base in Greater Noida West has already been taken into account, we expect prices in the corridor to be tepid till project deliveries begin and visible infrastructure is in place.

Over the next two years, we continue to foresee prices in these destinations to remaintepid. Hence, we forecast price appreciation to be limited, in the range of 3% to 4% for Greater Noida West and Dwarka Expressway (sectors 103–118), respectively. Considering this, the effective price rise from 2012 to 2017 on the basis of our new estimates will be 9% for Greater Noida West and 16% for Dwarka Expressway (sectors 103–118). We recommend that investors in these markets sell their investments and invest in areas with visible infrastructure.

Table 8: Review of the previously recommended investment destinations (₹/sq ft)

	Average price (₹/sq ft)			Price growth					Recommended action
	Recommended at	Current	New estimate	Projected during 2012	Realised till 2015	Revised estimate		New estimate	
	2012	2015	2017	2012-2017	2012-2015	2015-2017	Average annual	2012-2017	
Noida Extension	3,200	3,400	3,500	111%	6%	3%	1%	9%	Sell
Dwarka Expressway (sectors 103–118)	4,900	5,500	5,700	108%	12%	4%	2%	16%	Sell

Source: Knight Frank Research

MUMBAI METROPOLITAN REGION

The Mumbai Metropolitan Region (MMR) is spread over an area of 4,355 sq km, comprising 458 sq km of Mumbai City and the rest covering regions in the Thane, Palghar and Raigad districts. With the Arabian Sea to the west, the MMR consists of eight municipal corporations and nine municipal councils.

Vivek Rathi
Vice President - Research

Ankita Nimbekar
Lead Consultant - Research

MUMBAI METROPOLITAN REGION

1.
City overview

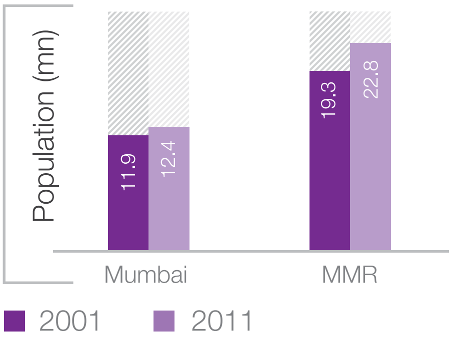
Introduction

The Mumbai Metropolitan Region (MMR) is spread over an area of 4,355 sq km, comprising 458 sq km of Mumbai City and the rest covering regions in the Thane, Palghar and Raigad districts. The population of Mumbai increased from 11.9 mn in 2001 to 12.4 mn in 2011 - a growth rate of 3.9%. However, the growth for the MMR was much higher, at 17.8%, taking the population from 19.3 mn to 22.8 mn during this period. With the Arabian Sea to the west, the MMR consists of eight municipal corporations and nine municipal councils.

The Mumbai Metropolitan Region Development Authority (MMRDA) is the apex planning body for the MMR. There are also several municipal governing bodies in the MMR, among which the Municipal Corporation of Greater Mumbai (MCGM) is the most significant.

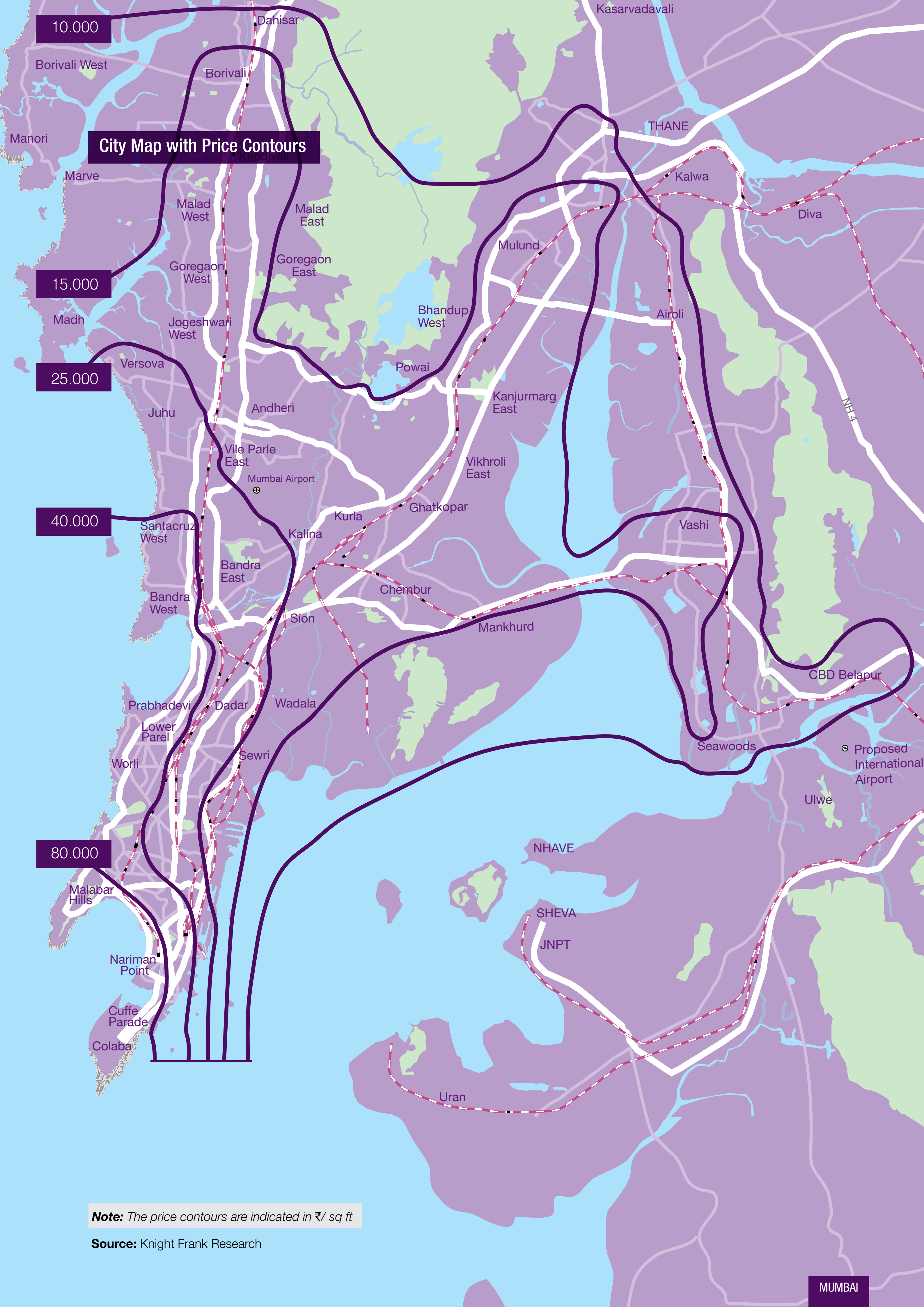
Currently under review for criticism over factual errors, the impact of high FSI and low open spaces, MCGM's Draft Development Plan 2034, which was proposed and rescinded earlier this year, had a special focus on transit-oriented development, with a view to align real estate development with the growth of the larger metropolitan region. Once finalised, it would influence the subsequent development plans of other municipal bodies in the region.

Chart 1: Population growth



Source: MCGM

City Map with Price Contours



Note: *The price contours are indicated in ₹/ sq ft*

Source: Knight Frank Research

> The performance of the various micro-markets in the MMR will vary according to their respective demand drivers, i.e. their occupation profiles, connectivity with employment hubs, physical and social infrastructure development and cost of real estate.

MMR residential market overview

The performance of the various micro-markets in the MMR will vary according to their respective demand drivers, i.e. their occupation profiles, connectivity with employment hubs, physical and social infrastructure development and cost of real estate. From the residential real estate market perspective, the MMR is divided into eight micro-markets, as follows:

Micro-markets	Indicative locations
Central Mumbai	Dadar, Lower Parel, Mahalakshmi, Worli, Prabhadevi
Central Suburbs	Sion, Chembur, Wadala, Kurla, Ghatkopar, Vikhroli, Bhandup, Mulund
Navi Mumbai	Vashi, Nerul, Belapur, Kharghar, Airoli, Panvel, Ulwe, Sanpada
Peripheral Central Suburbs	Kalyan, Kalwa, Dombivli, Ambernath, Bhiwandi, Mumbra, Karjat
Peripheral Western Suburbs	Vasai, Virar, Boisar, Palghar, Bhayandar, Nallasopara
South Mumbai	Malabar Hill, Napean Sea Road, Walkeshwar, Altamount Road, Colaba
Thane	Naupada, Ghodbunder Road, Pokhran Road, Majiwada, Khopat, Panchpakhadi
Western Suburbs	Bandra, Andheri, Goregaon, Borivali, Dahisar

South Mumbai:

This zone houses the city's central business district (CBD), comprising Nariman Point, Colaba, Cuffe Parade, Fort and Ballard Estate. Mumbai is the business capital of the country and the CBD is home to a large number of corporate headquarters. The Bombay Stock Exchange (BSE) is the oldest stock exchange in Asia, and some of the biggest Indian companies, such as Reliance Industries Limited, State Bank of India and Larsen & Toubro, operate from their headquarters here. The residential pockets in this zone, such as Cuffe Parade, Napean Sea Road and Malabar Hill, are among the most expensive in the country. With the Arabian Sea on three sides and a lack of land availability, there is limited scope for horizontal expansion in this zone, and the only way for large scale real estate development is by going vertical.

Central Mumbai:

Central Mumbai has emerged as a prominent residential market on the back of exceptional residential and social infrastructure developments during the last decade. This micro-market has also emerged as a premium office market for occupiers from the Banking Financial services and Insurance (BFSI) front office segment and corporate headquarters of corporations from the manufacturing, media and consulting sectors. The Mumbai Monorail will pass through this micro-market once the second phase (of 11.2 km), connecting Wadala and Jacob Circle, is operational by 2016. This will increase the attractiveness of this market even further and will ease the burdened traffic conditions in the densely-populated locations of Dadar, Parel and Lower Parel.

Central Suburbs:

The Central Suburbs extend from Sion to Mulund. This zone has decent social and physical infrastructure, and the presence of several organised retail options on LBS Road has added to the appeal of the residential developments in the region. During the last year, with the Mumbai Metro becoming operational in the zone, the MRTS connectivity to the Western Suburbs has improved.

Western Suburbs:

The region from Bandra to Dahisar towards the north of the city is identified as the Western Suburbs. It houses the Bandra Kurla Complex (BKC) - a planned commercial hub that has the country's largest stock exchange - the National Stock Exchange (NSE) - and important offices, such as the Consulate General of the United States and the British Deputy High Commission. Other significant office stock in this area is on the Andheri Kurla Road and along the Western Expressway up to Malad. Bandra and Juhu are the most sought-after locations for residential development and command the highest property prices here. This zone has a vibrant social infrastructure, with the presence of quality retail, education, entertainment and healthcare options. Property prices decline as one goes north from Bandra. While employment and social infrastructure are the drivers till Malad, locations further north are driven by connectivity, primarily by the suburban railway network and the Western Express Highway.

Peripheral Western Suburbs:

The markets extending from Mira-Bhayandar to Boisar have been classified as the Peripheral Western Suburbs. Although localities such as Palghar and Boisar are not part of the MMR, they have been considered from an analytical perspective on account of the improving suburban train connectivity over the last decade. Other than some industrial setup in locations such as Vasai and Palghar, there is no employment driver in this zone. National Highway (NH) 8 lends road connectivity to Mumbai, while the Western Line of the Mumbai Suburban Railway lends the MRTS connectivity. However, the daily commute to employment hubs via road is not a feasible option due to the distance and time involved and hence, the MRTS connectivity is the only driver in this zone.

Thane:

After long being considered a poor cousin of Mumbai's suburbs, Thane is now earning a reputation for quality residential developments on the back of improving physical and social infrastructure. Ghodbunder Road has developed as an arterial road connecting the eastern and western express highways. The Thane MIDC is the oldest of over 200 industrial development corporations (IDCs) in the state. However, with manufacturing activities fading in the urban centres, this is no longer the biggest driver in the region. The employment hubs in Mumbai are the primary employment driver. Residential properties in localities such as Naupada, Panchpakhadi, along the Eastern Express Highway (EEH) and Pokhran Road No. 2 are sought after and command relatively higher prices than the rest of the market.

Peripheral Central Suburbs:

This zone extends to localities such as Bhiwandi, Kalyan, Kasara and Karjat. From the real estate development perspective, the most critical factor is connectivity, primarily through the suburban railway network. While these distant suburbs provide affordable housing options, they are not self-sustainable with respect to employment opportunities. With the absence of employment hubs in this zone, residents have to travel to employment hubs in Mumbai, and are thus dependent on the railway network.

Navi Mumbai:

Developed as a planned satellite city of Mumbai, this zone is emerging as a self-sustained real estate market on account of the presence of employment opportunities, primarily in the IT/ITeS sector. While CBD Belapur has been planned as an office development hub, the other significant office micro-markets are Vashi and Thane-Belapur Road. This zone has several options for quality education and retail, with

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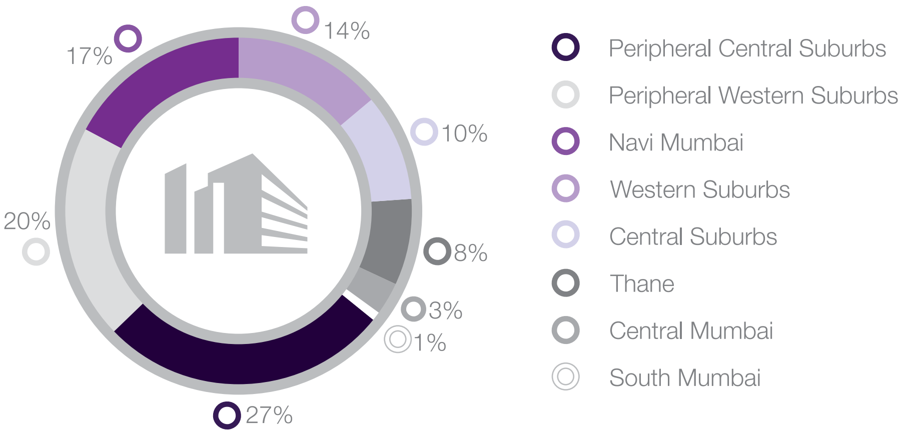
> Developed as a planned satellite city of Mumbai, Navi Mumbai is emerging as a self-sustained real estate market on account of the presence of employment opportunities, primarily in the IT/ITeS sector. While CBD Belapur has been planned as an office development hub, the other significant office micro-markets are Vashi and Thane-Belapur Road. This zone has several options for quality education and retail, with Vashi and Palm Beach Road forming the most prominent micro-market and commanding the highest property prices in this zone.

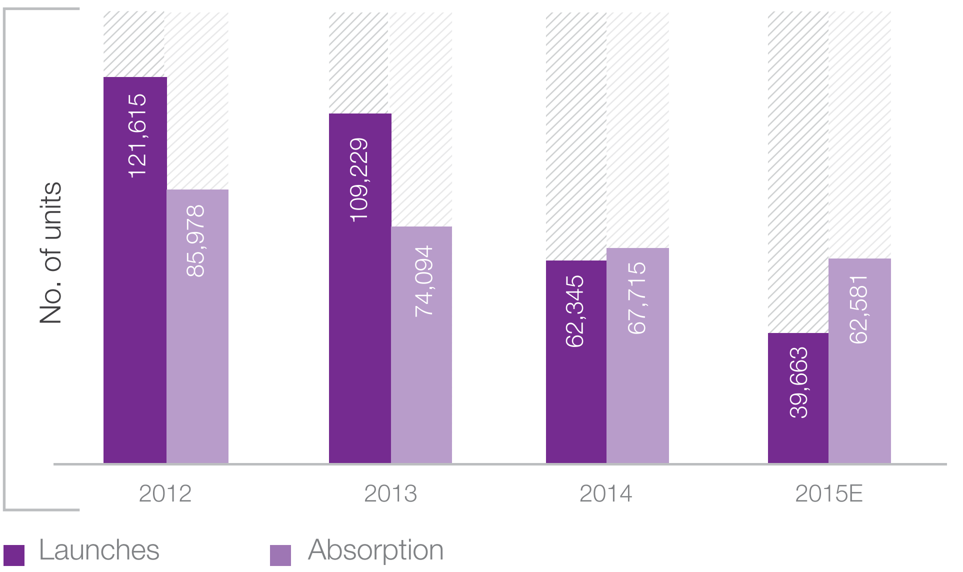
Vashi and Palm Beach Road forming the most prominent micro-market and commanding the highest property prices in this zone. Connectivity is mainly through the suburban rail network, which also connects this zone with the island city and the Central Suburbs. Road connectivity is supported by Thane-Belapur Road and Palm Beach Road.

Chart 2: Zone-wise split of under-construction units



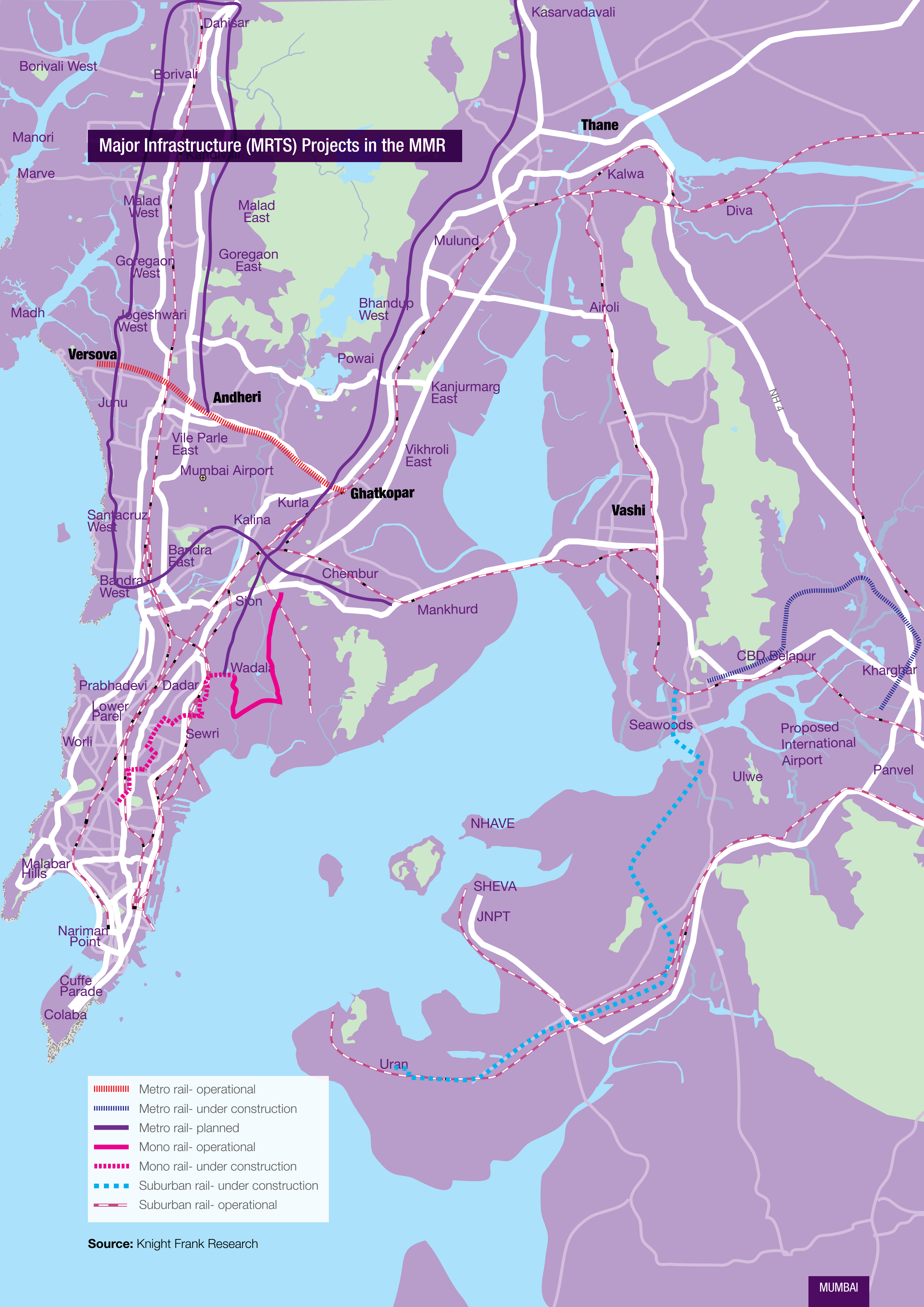
Source: Knight Frank Research

Chart 3: MMR residential trend



Source: Knight Frank Research

Major Infrastructure (MRTS) Projects in the MMR



Source: Knight Frank Research

Table 1: MRTS projects

Project	Distance	Observation	Status
Mumbai Monorail phase 1 (Chembur-Wadala)	8.93 km	Currently, this route has limited utility because of the absence of employment centres and interchange to other MRTS on the route.	Operational since 2014
Mumbai Monorail phase 2 (Wadala-Jacob Circle)	11.20 km	This route will connect Wadala and Chembur to the employment hubs of Central Mumbai.	Under-construction. Expected completion in 2016
Mumbai Metro Line 1 (Versova-Andheri-Ghatkopar)	11.40 km	The Mumbai Metro has enhanced the much-needed east-west connectivity through an MRTS, and reduced the journey time between Versova and Ghatkopar from 71 mins to 21 mins.	Operational since 2014
Mumbai Metro Line 2 (Dahisar-Charkop-Bandra-Mankhurd)	40 km	Fully underground, this route will augment the north-south and east-west connectivity in the city.	Planned. Expected completion in 2023
Mumbai Metro Line 4 (Wadala-Ghatkopar-Thane-Kasarvadavali)	32 km	Mostly underground, this route will enhance the connectivity between Thane and Mumbai.	Planned. Expected completion in 2023
Mumbai Metro (part of Line 2) (Dahisar West-DN Nagar)	18.5 km	At a cost of ₹6,410 cr, construction is expected to begin in 2016.	Planned. Expected completion in 2019
Mumbai Metro (part of Line 7) Andheri East-Dahisar East	16.5 km	At a cost of ₹6,208 cr, construction is expected to begin in 2016. It is prioritised to decongest the WEH and the western suburban rail corridor.	Planned. Expected completion in 2019
Navi Mumbai Metro Line 1 (Belapur-Taloje-Pendhar-Khandeshwar-NMIA)	23.4 km	With the upcoming Navi Mumbai International Airport and its integration with the Mumbai Metro in subsequent phases, this metro route will serve as a crucial urban mode of transport in Mumbai's satellite city.	Under-construction. Expected completion in 2017
Seawoods-Uran suburban train network	27 km	Currently, this route is connected only through Uran Road. An MRTS connectivity will benefit Ulwe and other markets to the south immensely.	Under-construction. Phase I, till Kharkopar, is expected to be completed in 2017. Phase II, till Uran, is expected to be completed in 2018.

Source: Knight Frank Research

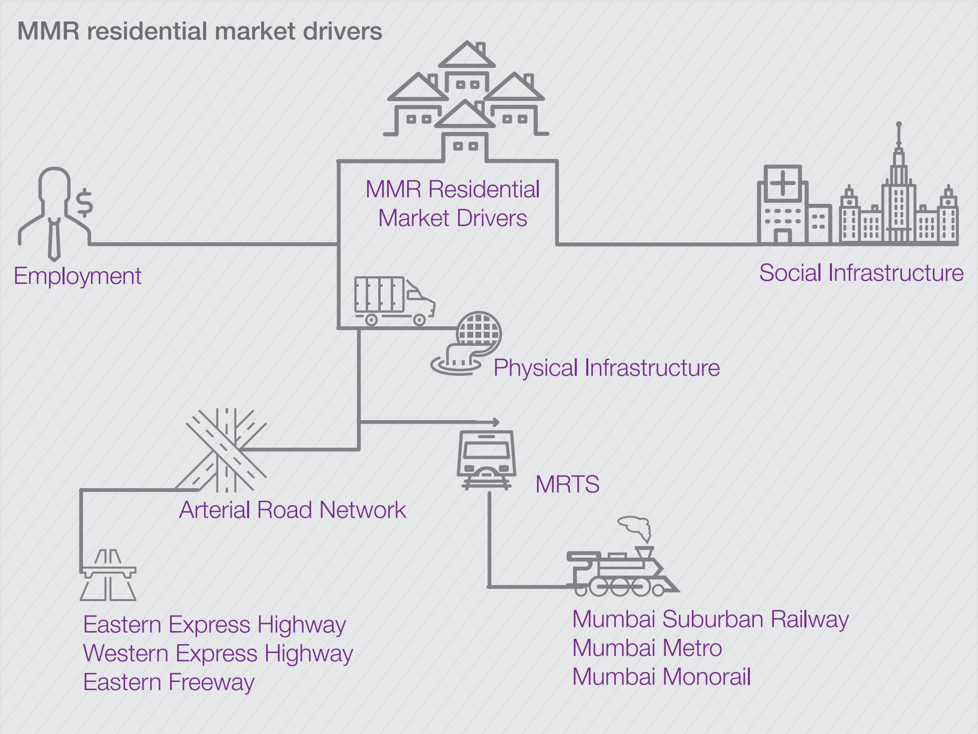
Table 2: Other projects

Project	Distance	Observation	Status
Eastern Freeway	16.9 km	This controlled-access highway project serves as a high-speed corridor connecting the central and eastern suburbs to the island city.	Operational since 2014
Mumbai Trans Harbour Link	22.5 km	This proposed six-lane sea bridge would connect Sewri in Mumbai to Nhava Sheva in Navi Mumbai. The bridge would be crucial to the increased traffic requirements on account of the upcoming Navi Mumbai International Airport.	Planned. Expected completion in 2020
Navi Mumbai International Airport	NA	The existing airport has a capacity of 40 mn passengers, which is almost saturated. The new airport will handle 10 mn passengers in its first phase and will go up to 60 mn passengers by 2030.	Planned. Expected completion of Phase 1 in 2019
Thane-Borivali Tunnel	10 km	At an estimated cost of ₹150 bn, this tunnel road will connect Thane at Tikuji ni wadi (Off-GB Road) and Borivali at Ekta Nagar-WEH thereby reducing travel time from around one hour to 10 mins.	Planned. Expected completion in 2019
Coastal Freeway	35.6 km	Extending from Kandivali in the Western Suburbs to Nariman Point in South Mumbai, this proposed coastal road will ease traffic congestion in the Western Suburbs. Concerns over the impact on the coastline prevail.	Planned. Expected completion in 2019

Source: Knight Frank Research

2.
Top investment destinations

What drives the MMR residential markets?



Source: Knight Frank Research

As an extension of the 458 sq km of Mumbai city, the Mumbai Metropolitan Region (MMR) is spread over 4,355 sq km. In the last decade, the population growth rate of Mumbai was 3.9%, and 40.3% for the rest of the MMR. By contrast, 80% of the 118 mn sq ft of the region's office space is in Mumbai. These dynamics make the long commute to work and back inevitable for a large section of the workforce in the MMR, and shape the real estate market as well. This is also reflected in the high price gradient of residential properties in the region, which varies from ₹3,000 per sq ft to ₹100,000 per sq ft. (Refer Map 1 - City map with price contours). Such a huge price variation arises on account of multiple factors - commuting time to employment hubs and other places of importance; access to education, healthcare and entertainment avenues; location profile and gentry; etc. These factors vary across localities and so does the property price.

Each factor can be dissected further to understand its implication on a particular market. Our analysis will focus on the top investment destinations of this edition as well as the top investment destinations of our first edition on this subject.

What is the outlook for the employment hubs?

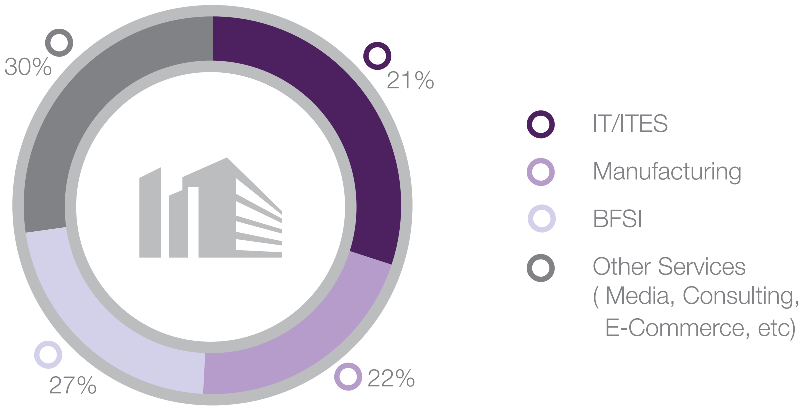
The financial services sector in Mumbai stands out singularly. This sector accounted for 27% of the office space demand in the last four years, followed by the manufacturing and IT/ITeS sectors.

Table 3: Classification of business districts in the MMR

Business district	Micro-markets
CBD and off-CBD	Nariman Point, Cuffe Parade, Ballard Estate, Fort, Mahalaxmi, Worli
Bandra Kurla Complex and off-Bandra Kurla Complex (BKC & off-BKC)	BKC, Bandra (E), Kalina, Kalanagar
Central Mumbai	Parel, Lower Parel, Dadar, Prabhadevi
SBD West	Andheri, Jogeshwari, Goregaon, Malad
SBD Central	Kurla, Ghatkopar, Vikhroli, Kanjurmarg, Powai, Bhandup, Chembur
PBD	Thane, Airoli, Vashi, Ghansoli, Rabale, Belapur

Source: Knight Frank Research

Chart 4: Office demand profile



Source: Knight Frank Research

While Mumbai has a well-diversified office occupier profile, no sector other than IT/ITeS has the capacity to absorb large spaces. While the core IT/ITeS domain is associated with technology companies such as TCS, Infosys, Wipro, Cognizant, etc., many more businesses are now transformed by technology. A decade ago, technology transformed the manner in which the financial securities market worked. Now, the banking sector is serious about existential crises on account of technological disruptions emerging in the form of payment wallets. In the case of retail trade, the debate has moved away from organised versus unorganised to brick-and-mortar versus online trade. Cars are less about

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mechanics and more about technology. While technology was an enabler for business in the recent past, it is now among the core differentiators for many businesses across different industries. Policy makers are also taking note of this. Catering to the needs of the IT/ITeS sector, the Government of Maharashtra has provided an incentive of up to 200% FSI for office space development for this sector in its new IT/ITES Policy 2015, among other initiatives.

Table 4: Office rents

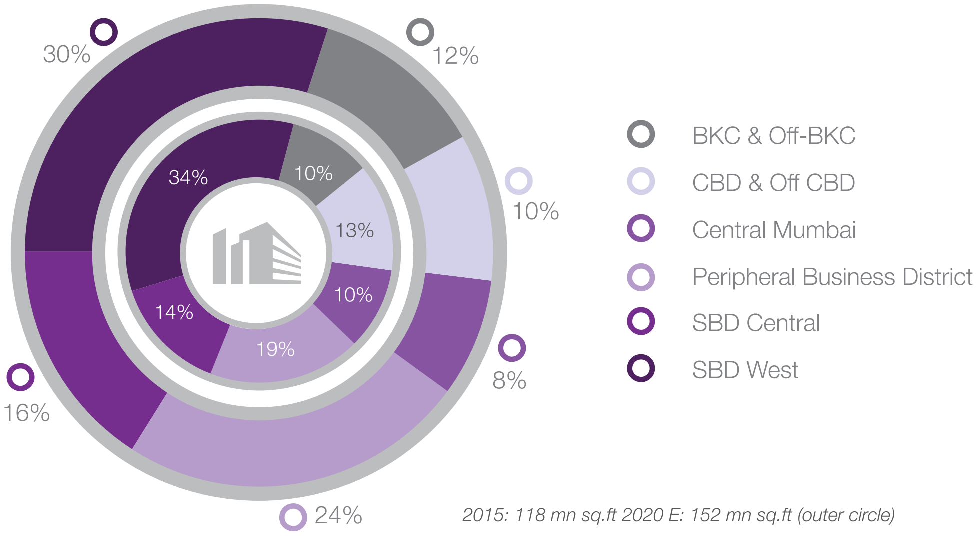
Business district	Office rent (₹/sq ft/month)
BKC & Off-BKC	210-300
CBD & Off-CBD	160-260
Central Mumbai	150-190
PBD	40-70
SBD Central	80-120
SBD West	90-140

Source: Knight Frank Research

> With improving connectivity, the direction of residential catchment growth and relatively lower rents compared to the other office hubs, the PBD and SBD Central would be the only business districts to witness their share in the MMR office stock increase in the next five years. Thus, the residential markets in this influence area will be the biggest beneficiaries. At the same time, considering affordability and ticket size sensitivity, markets under ₹10,000 per sq ft would fare better from an investment perspective which incidentally places residential markets in SBD Central at a relatively weaker position from investment perspective.

A look at the office space distribution in the MMR to understand the direction of employment growth reveals that the distribution is such that the premium office markets of BKC & off-BKC, Central Mumbai, and CBD & off-CBD together account for a third of the completed office space. SBD West accounts for another third, while SBD Central and PBD together account for yet another third. Depending on factors such as location accessibility to employees, land availability and rents, the office space development would accelerate in certain regions. In terms of rent, the PBD, i.e. the TTC and Thane localities, command ₹40-70 per sq ft per month, while SBD Central commands ₹80-120 per sq ft per month. Land availability in terms of industrial land, coupled with the incentive offered in the new IT/ITeS policy, would ensure a steady supply of office spaces without much pressure on rents. Further, employment hubs in SBD Central and Thane are centrally located, considering the fact that the residential catchments are growing towards localities such as Kalyan, Dombivali, Asangaon and Kasara. With improving connectivity, the direction of residential catchment growth and relatively lower rents compared to the other office hubs, the PBD and SBD Central would be the only business districts to witness their share in the MMR office stock increase in the next five years. Thus, the residential markets in this influence area will be the biggest beneficiaries. At the same time, considering affordability and ticket size sensitivity, markets under ₹10,000 per sq ft would fare better from an investment perspective which incidentally places residential markets in SBD Central at a relatively weaker position from investment perspective.

Chart 5: Distribution of office stock



2015: 118 mn sq.ft 2020 E: 152 mn sq.ft (outer circle)

Source: Knight Frank Research

What would be the impact of infrastructure development on the residential markets?

Considering a high price gradient of ₹3,000-100,000 per sq ft, the concentration of office space in Mumbai whereas high population growth in the rest of MMR, the role of infrastructure development is significant. Our prime focus in infrastructure development is on urban transport projects, with the MRTS being the most influential.

In the MMR, the suburban rail network has been the primary mode of commuting to work and back. Regions in the MMR that enjoy good connectivity (travel time and frequency) have witnessed flourishing property development.

The Mumbai Metro and Mumbai Monorail, considered to be efficient and comfortable urban transport systems, have now been integrated in the development plan for the MRTS. According to the 2004 Mumbai Metro Master Plan,146 km of metro rail network has been envisaged for the city. Another 106 km is envisaged for the Navi Mumbai region. However, only an 11.40-km stretch (Versova-Ghatkopar) of the metro corridor has been operational since 2014. A route of approximately 24 km is under construction in Navi Mumbai, and the rest is in various stages of planning.

The government will expedite certain projects, irrespective of their initial phasing, on a need-and-feasibility basis, and therefore, the ones that are likely to move to the ground-breaking stage during our forecast horizon (2020) are the ones that will have a likely impact on property prices. In tables 1 and 2, we have listed significant projects and our observations, based on parameters such as status and primary influence areas.

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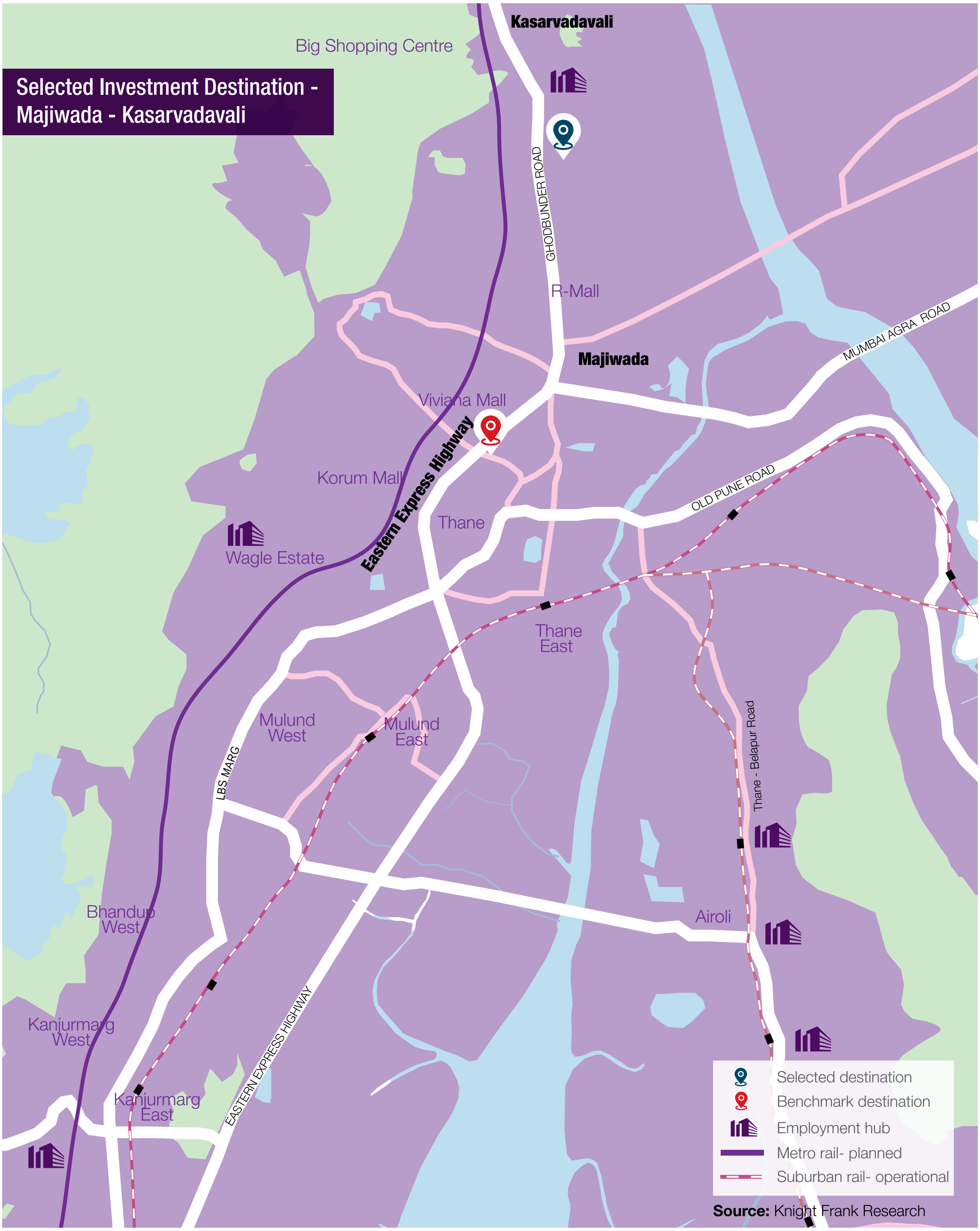
Selected destination: Majiwada-Kasarvadavali

Majiwada-Kasarvadavali, a region on Ghodbunder Road (State Highway 42) in Thane, has emerged as a top investment destination in the MMR. This has happened on account of its attractiveness in terms of residential pricing, compared to the benchmark location, access to employment opportunities, and physical and social infrastructure.



Source: Knight Frank Research

What are the demand drivers in Majiwada-Kasarvadavali?

Spread over approximately 6 km, Majiwada-Kasarvadavali (the destination) has good connectivity to places of importance in Mumbai, as indicated in the adjoining table.

Table 5: Connectivity to places of importance

Access to	Approx. distance (km)	Approx. travel time via road (min)
Employment hubs		
Ghodbunder Road	1	0-5
Wagle Estate, Thane	10	10-15
Airoli, Thane-Belapur road	15	30-40
Vashi, Thane-Belapur road	25	45-60
BKC	30	45-60
Lower Parel	40	60-75
Nariman Point	50	75-90
Airport		
Existing - Santacruz	35	60-75
Upcoming - Ulwe	35	60-75
Retail		
Viviana Mall, Thane	8	10-15
Korum Mall, Thane	9	10-15
R-Mall, Thane	5	5-10
Big Shopping Centre, Thane	1	0-5

(***Note:*** *Kasarvadavali is considered as the place of origin*)

Source: Knight Frank Research

> “The government will expedite certain projects, irrespective of their initial phasing, on a need-and-feasibility basis, and therefore, the ones that are likely to move to the ground-breaking stage during our forecast horizon (2020) are the ones that will have a likely impact on property prices.”

> Going forward, we estimate an incremental office space addition of 13.7 mn sq ft in the PBD in the next five years (2016-2020). Of this, approximately 5 mn sq ft will be in Wagle Estate and GB Road itself. Considering that a million square feet of office space translates into a workforce of about 12,500 employees, this presents a promising opportunity for our top destination. Ghodbunder Road and Wagle Estate alone would witness incremental employment of 62,500 people.

Majiwada-Kasarvadavali has suburban train connectivity to office hubs in Mumbai and Navi Mumbai through the Thane railway station. Ghodbunder Road (GB Road) connects the destination to the Eastern Express Highway and Western Express Highway/ NH-8. The completion of all the flyovers on GB Road, with the final one being the five-arm Majiwada flyover, which was completed this year, has ensured a faster drive. Incremental infrastructure in terms of the 32-km Mumbai Metro Line 4 (Wadala-Ghatkopar-Thane-Kasarvadavali) is scheduled for implementation in 2017-2023, and will pass through the destination. This will provide direct MRTS access to Majiwada-Kasarvadavali. Additionally, the planned 10 km Thane-Borivali tunnel will shorten the road travel time to employment hubs in the western suburbs from approximately an hour to 15 mins. This is estimated to be completed by 2019.

Employment hubs in the PBD, which include the office markets of Thane and Navi Mumbai, have an office stock of 23 mn sq ft, out of which 5.4 mn sq ft is present in localities such as Wagle Estate and GB Road, Thane. Going forward, we estimate an incremental office space addition of 13.7 mn sq ft in the PBD in the next five years (2016-2020). Of this, approximately 5 mn sq ft will be in Wagle Estate and GB Road itself. Considering that a million square feet of office space translates into a workforce of about 12,500 employees, this presents a promising opportunity for our top destination. Ghodbunder Road and Wagle Estate alone would witness incremental employment of 62,500 people.

Quality social infrastructure, in terms of retail, educational and healthcare facilities, has come up along the Eastern Express Highway and GB Road, thereby making it a vibrant residential catchment. Going forward, the momentum on this count is expected to grow stronger.

How would the drivers pan out on the residential property prices in Majiwada-Kasarvadavali?

The Eastern Express Highway-Thane belt has been considered the benchmark for Majiwada-Kasarvadavali. As a residential catchment, the Eastern Express Highway-Thane belt has matured, and prices here are in the range of ₹10,000-14,000 per sq ft. In the selected destination of Majiwada-Kasarvadavali, the prices are in the range of ₹7,000-9,000 per sq ft, depending on the type of project and its location along GB Road.

At an average price of ₹8,000 per sq ft, residential property in our top destination trades at a discount of 33% from the ₹12,000 per sq ft price prevailing in the benchmark location.

With progress on the Kasarvadavali metro rail and incremental employment opportunities during our forecast horizon, this discount will narrow down from 33% to 10%. For our top destination, this will translate into a price movement from the current ₹8,000 per sq ft to ₹12,700 per sq ft - an appreciation of 59% during the next five years.

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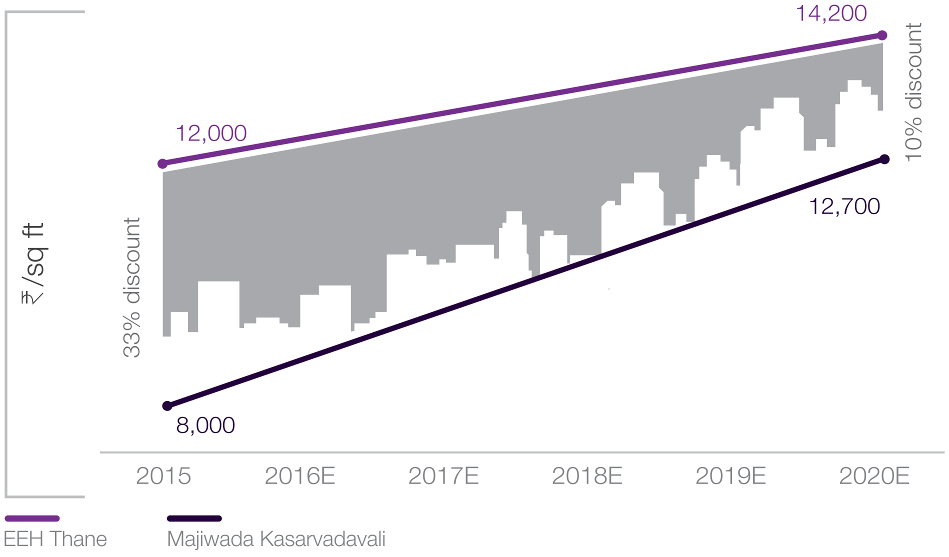
Table 6: Price movement in the benchmark location and investment destination

	2015 (Prices in ₹/sq ft)			2020E (Prices in ₹/sq ft)			Price growth		Discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020	CAGR	2015	2020E
Eastern Express Highway, Thane (benchmark location)	10,000	14,000	12,000	11,800	16,500	14,200	18%	3.3%		
Majiwada - Kasarvadavali (selected destination)	7,000	9,000	8,000	11,100	14,300	12,700	59%	9.7%	33%	10%

(*Note:* *The price growth and discount from 2015 to 2020 is calculated on the average price of that location)*

Source: Knight Frank Research

Chart 6: Price movement in benchmark location and investment destination



Source: Knight Frank Research

Is there a precedent to such a trend?

In the case of the Eastern Express Highway Thane, now a matured market, the residential property price was at an average of ₹8,500 per sq ft in 2012. With new office developments north of the CBD, the PBD saw an incremental office space of 6.4 mn sq ft in 2013-15. Residential prices in Eastern Express Highway Thane appreciated by 29% to ₹11,000 per sq ft during this period. In the next five years, office space development of 13.7 mn sq ft has been estimated for the PBD market, thereby having a similar impact on property prices in our top destination.

Selected destination: Ulwe

Ulwe, a developing residential catchment in Navi Mumbai, has been identified as a top investment destination in the MMR. This is the second time that this destination has appeared in our investment report. Despite being a tough residential market, the price performance has been fairly in line with our forecast in the first edition of this report, in 2012.

Selected Investment Destination - Ulwe

Source: Knight Frank Research

What are the drivers of demand in Ulwe?

Nestled around the established residential markets of Seawoods and Belapur, the destination Ulwe has a fairly decent connectivity to important places in Mumbai, as highlighted in the adjoining table.

Table 7: Connectivity to places of importance

Access to	Approx. distance (km)	Approx. travel time via road (min)
Employment hubs		
CBD Belapur	5	10-15
Vashi, Thane-Belapur road	12	15-20
Airoli, Thane-Belapur road	22	30-45
JNPT	20	30-45
BKC	30	60-75
Lower Parel	35	75-90
Nariman Point	40	75-90
Airport		
Existing - Santacruz	35	60-75
Upcoming - Ulwe	1	0-5
Retail		
L&T Seawoods Grand Central	6	10-15
Little World Mall, Kharghar	10	15-20
Inorbit Mall, Vashi	12	15-20

Source: Knight Frank Research

Ulwe is connected to important places in Navi Mumbai and Mumbai via road. Thane-Belapur road and Palm Beach Road connect it to important localities such as Belapur, Vashi, Mahape and Airoli in Navi Mumbai. The Sion-Panvel Expressway connects it to places of importance in Mumbai.

Since road travel is time consuming and expensive, a large section of the workforce in the MMR depends on the suburban train network to commute to and from their workplaces. At present, Ulwe lacks any such MRTS-based transport. However, a 27-km Seawoods-Uran suburban train route is underway and scheduled to be completed during our forecast horizon. The sea bridge between Seawoods and Ulwe is complete and work on the railway stations and the route itself is in the advanced stages. Beginning from Seawoods, Phase I of the route, till Kharkopar, will be ready by 2017, followed by an extension to Uran by 2018. This mode of transport will reduce the travel time and cost of transit to the employment hubs on the Thane-Belapur road.

The employment hubs in the PBD, which include the office markets of Thane and Navi Mumbai, have an office stock of 23 mn sq ft, out of which 17.6 mn sq ft is in Navi Mumbai - in localities such as Belapur, Vashi, Mahape and Airoli. We estimate an incremental office space addition of 13.7 mn sq ft in the PBD in the next five years (2016-2020). Of this, approximately 8.7 mn sq ft will be in markets along the Thane-Belapur road. Considering that a million square feet of office space translates into a workforce of about 12,500 employees, this presents a promising opportunity for our top destination. Navi Mumbai alone would witness incremental employment of around 109,000 people.

Commercial activity around Ulwe is also expected to get a boost on account of the ecosystem that will be created for the Navi Mumbai International Airport. There has been an inordinate delay in the construction of this new airport. However, there are two points worth mentioning: first, the existing airport has a capacity of 40 million passengers, which is almost saturated. Thus, there is a need for a new airport in the region. Second, after deliberating for several alternative locations in and around the MMR, the stakeholders have realised that this is the only appropriate location for the new airport. There are certain on-going land acquisition issues, which should be resolved as soon as possible, and this should pave the way for the new airport, which will handle 10 million passengers in its first phase, going up to 60 million passengers by 2030. Phase I of this airport is expected to be operational by 2019.

There has been a flurry of residential construction activity in Ulwe at present, but quality social infrastructure can be accessed only through the neighbouring markets of Seawoods and Belapur, which are approximately 5 km or a 10-15 minute drive away. Further, neighbouring localities such as Khargar and Nerul, which are 10 km or a 15-20 minute drive away, have a plethora of educational institutes.

How would the drivers pan out on the residential property prices in Ulwe?

Seawoods, a mature residential catchment, located 5 km or a 10-12 minute drive, is considered a benchmark location for our top destination.
At present, the residential price in Seawoods is in the range of ₹10,000-13,000 per sq ft, with good properties on Palm Beach Road commanding even higher prices. In contrast, prices in Ulwe are at around ₹5,500-6,500 per sq ft.

At an average price of ₹6,000 per sq ft in our top destination and ₹11,500 per sq ft in the benchmark location, residential property in Ulwe is at a discount of 48%. The primary reason for this discount is the absence of MRTS connectivity and quality social infrastructure. The slated completion of the under-construction Seawoods-Kharkopar suburban railway network and heightened employment opportunities in the PBD should boost residential property demand during our forecast horizon. Considering the market characteristic convergence in our destination and price discount from the established neighbouring localities, consumer demand will pick up in the top destination. As a result, the discount is forecasted to narrow down from 48% to 25%, translating in to a price increase from ₹6,000 per sq ft to ₹10,200 per sq ft by 2020.

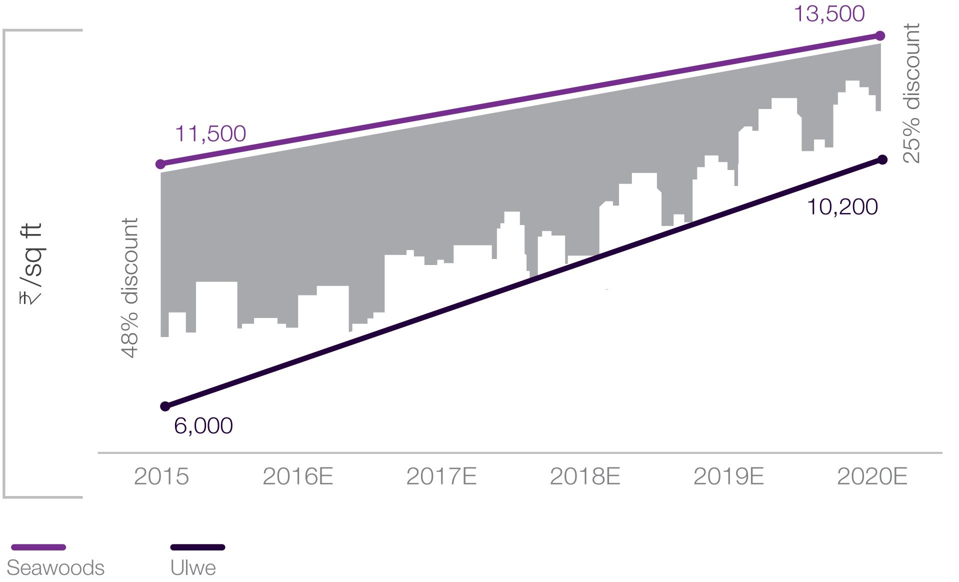
Table 8: Price movement in the benchmark location and investment destination

	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020	CAGR	2015	2020E
Seawoods (benchmark location)	10,000	13,000	11,500	11,800	15,400	13,500	18%	3.3%		
Ulwe (selected destination)	5,500	6,500	6,000	9,300	11,000	10,200	70%	11.2%	48%	25%

(**Note:** *The price growth and discount from 2015 to 2020 is calculated on the average price of that location)*

Source: Knight Frank Research

Chart 7: Price movement in benchmark location and investment destination



Source: Knight Frank Research

Is there a precedent to such a trend?

Residential capital values in the established locality of Seawoods increased from ₹9,500 per sq ft to ₹11,500 per sq ft in 2012-15 - an appreciation of 21% in three years. During this period, office space in the PBD localities of the Thane-Belapur road, Wagle Estate and GB Road witnessed office completions of 6.4 mn sq ft, driving the residential demand in Seawoods. Going forward (2015-2017), new office completions of 13.7 mn sq ft in the PBD would boost residential demand and consequently, the prices in Ulwe.

Selected destination: Madh-Marve

Madh-Marve, nestled between the Arabian Sea to the west and Malad Creek to the east, has emerged as a top investment destination in MMR. At present, this destination can be reached via the Malad-Marve road or the ferry service from Versova, Andheri West. Considering the incremental infrastructure in terms of the upcoming Coastal Freeway and the Versova-Madh sea bridge, this destination would emerge as a preferred residential market, akin to Lokhandwala, Andheri West.

Source: Knight Frank Research

What are the demand drivers in Madh-Marve?

Spread over approximately 8 km, Madh-Marve (the destination) currently faces a challenge with respect to road connectivity. In the absence of a sea bridge between the islands of Versova and Madh, a detour is required to reach places of importance, as indicated in the table below.

Table 9: Connectivity to places of importance

Access to	Approx. distance (km)	Approx. travel time via road (min)
Employment hubs		
Mindspace, Malad	12	25-35
Nirlon Knowledge Park, Goregaon	20	45-60
Andheri East	25	60-75
Bandra Kurla Complex (BKC)	30	75-90
Lower Parel	40	90-105
Nariman Point	50	105-120
Airport		
Existing - Santacruz	25	60-75
Upcoming - Ulwe	60	105-120
Retail		
Oberoi Mall, Goregaon	15	45-60
Inorbit Mall, Malad	13	30-45

Note: *Madh is considered as the place of origin*

Source: Knight Frank Research

With the topography of a beach destination and the challenges concerning connectivity, Madh-Marve is currently considered as a favoured holiday destination or, at best, a locality driven by the neighbouring employment hubs of Malad and Goregaon.However, two upcoming infrastructure projects are estimated to unlock this locality's potential as a premium residential market, which would draw parallels with the residential catchment of Lokhandwala, Andheri West.

The first one is an approximately kilometre-long sea bridge between Versova and Madh. Currently dependent on the ferry services between these two localities, the upcoming sea bridge will boost the destination's road connectivity with the neighbouring localities of Versova and Lokhandwala in Andheri West. The project has been approved by the planning authority, and construction would be completed well within our forecast horizon of 2020.

The second project is the 35.6-km Coastal Freeway that would extend from Nariman Point in South Mumbai to Kandivali in the Western Suburbs. Given the relatively lower execution complexity compared to a metro rail or monorail, this ambitious project has the advantage of faster execution and is expected to be operational by 2019. Along with the Versova-Madh sea bridge, the Coastal Freeway would drastically reduce the road travel time from the selected destination to the South Mumbai office markets, such as BKC, Lower Parel, Worli and Nariman Point. The scope for luxury lifestyle residential developments alongside the Arabian Sea, coupled with enhanced, seamless access to the premium office markets, would drive housing demand in the Madh-Marve locality.

How would the drivers pan out on the residential property prices in Madh-Marve?

Lokhandwala, Andheri West, has been considered the benchmark for Madh-Marve. Lokhandwala is a premium established residential locality,and prices there are in the range of ₹20,000-26,000 per sq ft. In the selected destination of Madh-Marve, the prices are in the range of ₹12,000-15,000 per sq ft. At an average price of ₹13,500 per sq ft, residential property in our top destination sells at a discount of 41% from the ₹23,000 per sq ft price prevailing in the benchmark location.

With the construction of the Versova-Madh sea bridge and the Coastal Freeway during our forecast horizon, this discount will narrow down from 41% to 15%. For our top destination, this will translate into a price appreciation from the current ₹13,500 per sq ft to ₹26,200 per sq ft - an appreciation of 94% during the next five years.

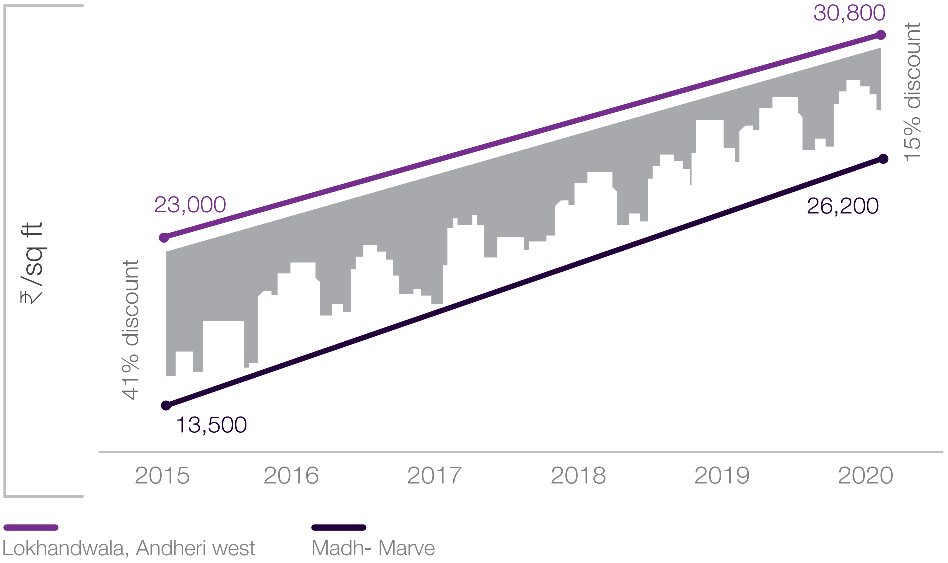
Table 10: Price movement in the benchmark location and investment destination

	2015 (Price in ₹/sq ft)			**2020E (Price in ₹/sq ft)**			**Price growth**		**Price discount**	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020	CAGR	2015	2020E
Lokhandwala, Andheri West (benchmark location)	20,000	26,000	23,000	26,800	34,800	30,800	34%	6%		
Madh-Marve (selected destination)	12,000	15,000	13,500	23,300	29,000	26,200	94%	14.2%	41%	15%

(**Note:** *The price growth and discount from 2015 to 2020 is calculated on the average price of that location)*

Source: Knight Frank Research

Chart 8: Price movement in benchmark location and investment destination



Source: Knight Frank Research

3.
Review of the previously-recommended investment destinations

Since our first edition of the investment advisory report in 2012, residential market has turned from bad to worse. While it began with slowdown in demand, pressure on prices is now very prominent. Amidst such a landscape, our previously-recommended investment destinations of Ulwe, Wadala and Chembur witnessed price appreciation that was much higher than the price growth in the city. However, the intensity of price appreciation has fallen short of our projections. Besides a slowdown in residential property cycle, certain destination-specific factors panned out differently from what we had forecasted resulting in to such disconnect.

In the case of Wadala and Chembur, the Eastern Freeway and Mumbai Monorail Phase I were completed with a one-year delay. Similar was the delay for the Santacruz-Chembur Link Road. Further, strong price resistance is now seen in these destinations as consumers look for relatively affordable markets in the central suburbs. As a result, a meagre price growth of 3% pa and 5% pa for Chembur and Wadala respectively is projected for the next two years until 2017. With such muted price growth investors would be better placed selling in these markets.

In the case of Ulwe, there has been a delay in the construction of the Seawoods-Uran rail network and the new international airport. Ulwe, however, in light of the incremental infrastructure and employment coupled with the attractive pricing again finds a place in our top investment destinations list this time. A detailed explanation is provided in the Ulwe destination section.

Table 11: Review of the previously recommended investment destinations (₹/sq ft)

	Average price (₹/sq ft)			**Price growth**					**Recommended action**
	Recommended at	Current	New estimate	Projected during 2012	Realised till 2015	Revised estimate		New estimate	
	2012	2015	2017	2012-2017	2012-2015	2015-2017	Average annual	2012-2017	
Chembur	12,000	17,000	18,000	125%	42%	6%	3%	50%	Sell
Wadala	15,000	21,000	23,000	133%	40%	10%	5%	53%	Sell

Source: Knight Frank Research

PUNE METROPOLITAN REGION

Pune's urban agglomeration, also known as the Pune Metropolitan Region (PMR), is spread over 3,500 sq km and consists of the Pune Municipal Corporation (PMC), Pimpri Chinchwad Municipal Corporation (PCMC), Pune Cantonment and Kirkee (Khadki) Cantonment.

Hetal Bachkaniwala
Vice President - Research

PUNE METROPOLITAN REGION

1.

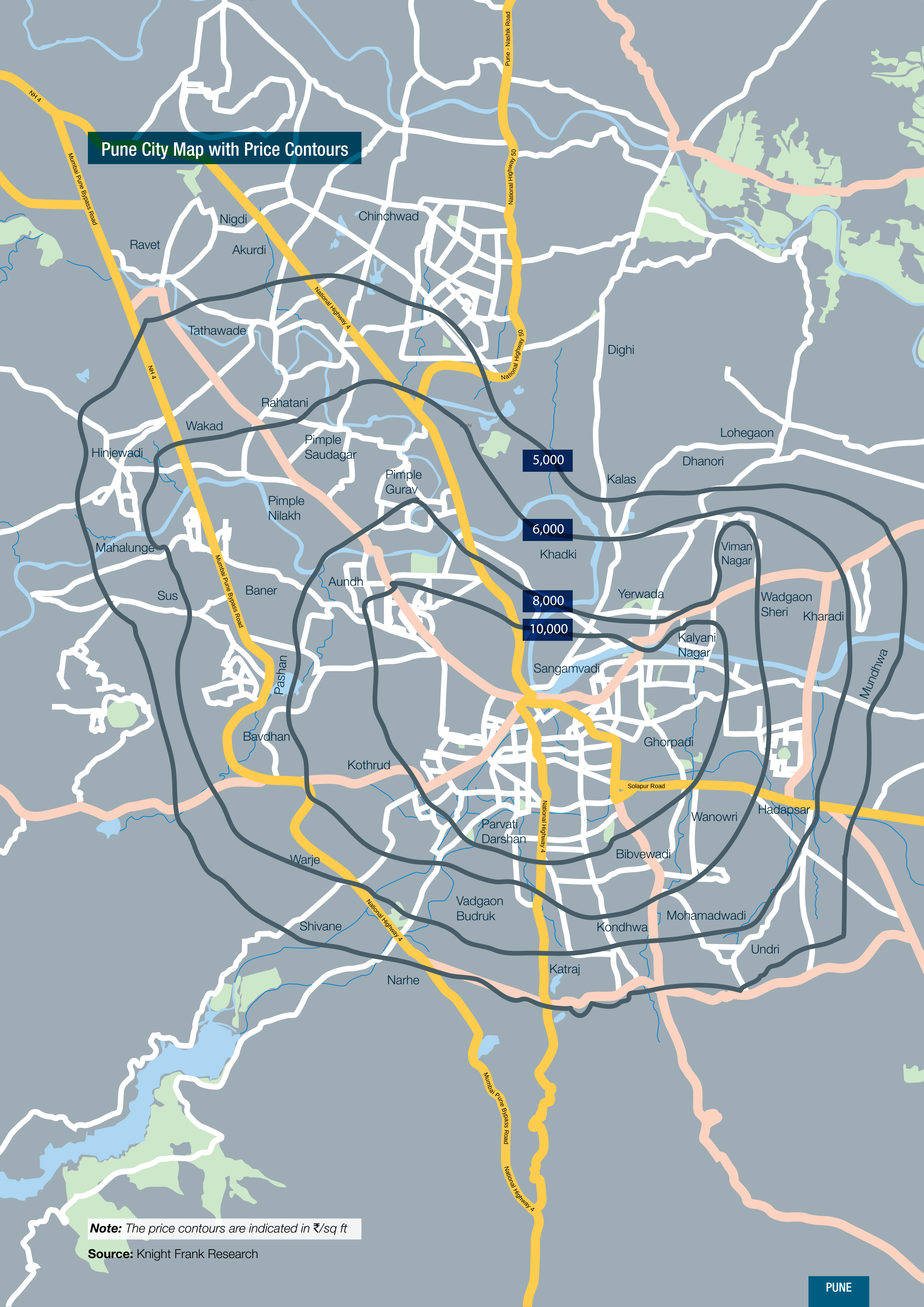
City overview

Introduction

Pune's urban agglomeration, also known as the Pune Metropolitan Region (PMR), is spread over 3,500 sq km and consists of the Pune Municipal Corporation (PMC), Pimpri Chinchwad Municipal Corporation (PCMC), Pune Cantonment and Kirkee (Khadki) Cantonment. According to Census 2011, the total population of the PMR was 5.75 mn.

The development of the PMR is undertaken by various agencies, such as the PMC, PCMC, the Public Works Department (PWD) and others. The absence of a single, unified planning authority for the metropolitan region has led to an inordinate delay in the execution of various infrastructure projects. However, earlier this year, the Government of Maharashtra finally notified of the formation of a regional development body, called the Pune Metropolitan Region Development Authority (PMRDA). Currently, the PMRDA is in the process of preparing an integrated development plan (DP) for the entire region, which will eventually replace the individual development plans of the various local bodies, including the PMC and PCMC. The PMRDA may also be responsible for major infrastructure projects, such as the metro rail and outer ring roads.

Pune City Map with Price Contours



Note: *The price contours are indicated in ₹/sq ft*

Source: Knight Frank Research

> The last ten years have seen East Pune evolve as a preferred residential zone due to the presence of a large number of IT/ITeS offices, ample physical and social infrastructure, a well-established retail market, the presence of the airport and the zone's proximity to the city centre.

Pune residential market overview

The Pune residential market is broadly divided into five zones: Central, East, West, North and South.

Zone	Major Residential Destinations
Central	Koregaon Park, Boat Club Road, Erandwane, Deccan, Kothrud, Model Colony
North	Pimpri, Chinchwad, Moshi, Chikhali, Chakan, Talegaon
South	Kondhwa, Ambegaon, Undri, Dhayari, Warje, Sinhgad Road
East	Viman Nagar, Kharadi, Wagholi, Hadapsar, Dhanori
West	Aundh, Baner, Wakad, Hinjewadi, Bavdhan, Pashan

Central Pune

Central Pune is the commercial heart of the city, with numerous corporate offices located in the central business district (CBD) areas of Bund Garden Road, M. G. Road, Deccan, Senapati Bapat Road and Shivajinagar. Good physical and social infrastructure, the presence of organised retail, excellent connectivity with various parts of the city and limited availability of vacant land have ensured that property prices are the highest in this part of the city. Koregaon Park, Dhole Patil Road, Model Colony and Kothrud are some of the principal residential areas in this zone.

North Pune

North Pune is primarily an industrial area, with various automobile and auto ancillary as well as engineering industries located here. The twin towns of Pimpri and Chinchwad host the manufacturing units of some of India's leading automobile companies, such as Bajaj Auto, Tata Motors, Force Motors and DaimlerChrysler. Engineering giants such as Thermax, Forbes-Marshall, ThyssenKrupp and Alfa Laval also have their manufacturing plants in this zone. North Pune has always been a self-sufficient region, with a flourishing residential market due to the employment generated by the manufacturing sector. Pimpri, Chinchwad, Nigdi and Moshi are some of the main residential areas here.

South Pune

Over a period of time, South Pune emerged as a more affordable alternative to Central Pune in terms of the residential market. Those who would have preferred a home near the city centre but are unable to afford a house there settle in these locations. However, a key factor that has restricted the development of this zone is the lack of significant employment opportunities. Some of the chief residential areas in South Pune are Katraj, Kondhwa, NIBM Road and Warje.

East Pune

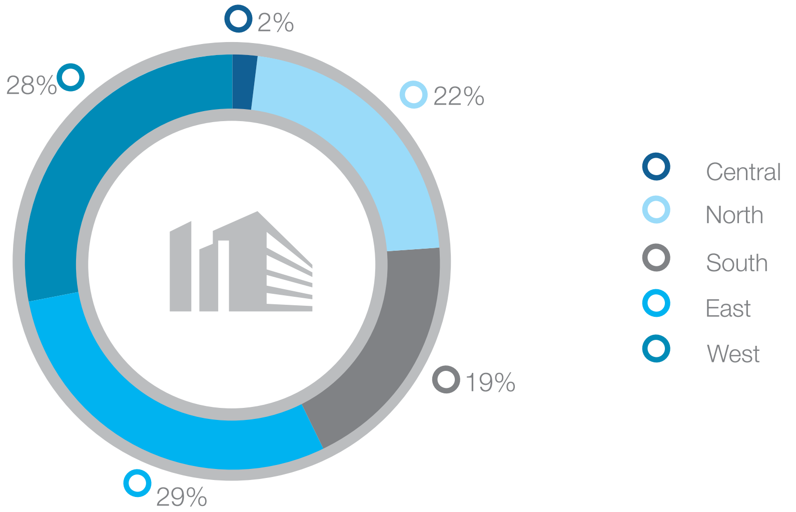
The last ten years have seen East Pune evolve as a preferred residential zone due to the presence of a large number of IT/ITeS offices, ample physical and social infrastructure, a well-established retail market, the presence of the airport and the zone's proximity to the city centre. The development of self-sustaining integrated township projects, such as Magarpatta City and Amanora Park Town, along with the immense employment opportunities offered by the various IT/ITeS parks, has boosted the residential market even further. Viman Nagar, Kharadi, Wagholi, Hadapsar and Dhanori are some of the prominent residential locations in East Pune.

West Pune

Hinjewadi, in West Pune, has emerged as an alternative office hub for the IT/ITeS sector over the last decade, and is currently presenting tough competition for the established office market of East Pune. Affordable rents and the availability of ample vacant land suitable for built-to-suit offices for captive use have attracted many blue chip companies to Hinjewadi as compared to East Pune. This has helped in establishing a robust residential market along the Mumbai-Pune Bypass Road. The residential destinations in West Pune include Aundh, Baner, Wakad, Hinjewadi, Bavdhan and Pashan.

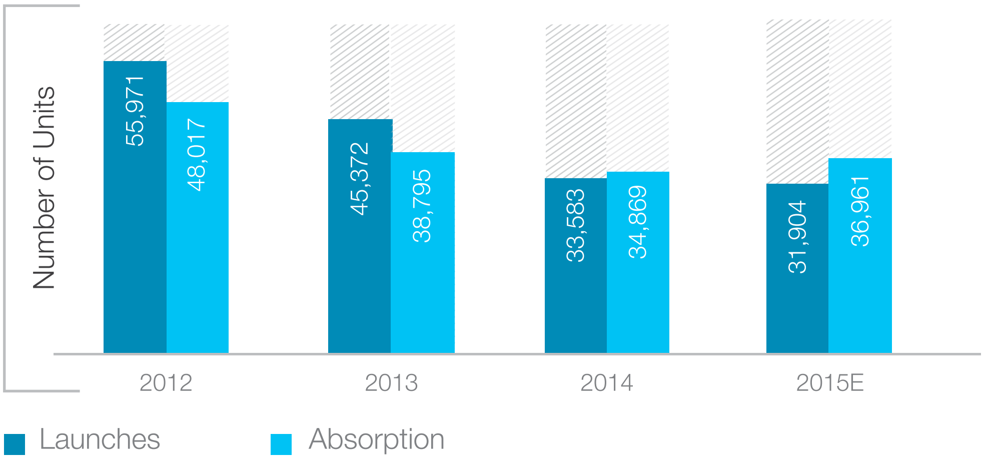
> Affordable rents and the availability of ample vacant land suitable for built-to-suit offices for captive use have attracted many blue chip companies to Hinjewadi. This has helped in establishing a robust residential market along the Mumbai-Pune Bypass Road.

Chart 1: Zone-wise split of under-construction units



Source: Knight Frank Research

Chart 2: Demand-supply trend in Pune



Source: Knight Frank Research

Major Infrastructure Projects

Source: Knight Frank Research

Table 1: Existing arterial road network

Name	Connectivity	Description
Road Network		
Old Mumbai-Pune Highway	Starts at Shivajinagar and leads to Mumbai via Pimpri-Chinchwad	A vital road connecting Pimpri-Chinchwad with Central Pune
Mumbai-Pune Bypass Road (NH-4)	Connects Katraj in South Pune with the Mumbai-Pune Expressway and Pimpri-Chinchwad in the north	Provides seamless connectivity with Hinjewadi in the west, the Mumbai Pune Expressway in the north and the Pune-Bangalore Highway in the south
Pune Nashik Highway (NH-50)	Starts at Kasarwadi and leads to Nashik in the north via Chakan	Connects North Pune markets, such as Bhosari and Moshi, with the city centre
Pune Solapur Highway (NH-9)	Starts from Camp in the city centre and heads towards Solapur in the east	Provides easy connectivity from the city centre to Hadapsar in East Pune
Pune Nagar Road	Connects Yerwada in the east to Ahmednagar in the northeast via Wagholi	Provides easy connectivity from the city centre to Viman Nagar, Kharadi and Wagholi in East Pune
Mundhwa Kharadi Road	Connects Nagar Road in the northeast to the Pune-Solapur Highway (NH-9) in the east	Provides easy connectivity between Kharadi and Hadapsar

Source: Knight Frank Research

Table 2: Upcoming arterial road network

Name	Connectivity	Description	Current status	Expected completion
Road Network				
Outer Ring Road I	Theur Phata (NH-9) - Wagholi - Chimbli (NH-50)	Will provide direct connectivity between NH-9 in East Pune and NH-50 in North Pune	Preparation of a detailed project report	By 2020
Outer Ring Road II	Chimbali Phata (NH-50) - NH-4 - Pirangut	Will provide easy access between North and West Pune		
Outer Ring Road III	Pirangut - Sinhagad - Pune - Bangalore Highway (NH-4)	Will connect West Pune with Sinhagad and the Pune-Bangalore Highway in South Pune		
Outer Ring Road IV	Katraj (NH-4) - Theur Phata (NH-9)	Will connect NH-4 in the south and NH-9 in East Pune directly		

Source: Knight Frank Research

Table 3: Bus Rapid Transit System (BRTS) network

Name	Length (km)	Bus stops	Current status	Expected completion
Bus Rapid Transit System				
Kalewadi Phata to Dehu Alandi	10.2	19	Work in progress	2016 - 2017
Aundh to Ravet	14.5	21	Work completed	Operational since September 2015
Nashik Phata to Wakad	8.2	15	Work completed	2015 - 2016
Nigdi to Dapodi	12.1	36	Work completed	2015 - 2016
Nagar Road	8	13	Work completed	2015 - 2016
Sangamwadi to Vishrantwadi	8	9	Work completed	Operational since August 2015

Source: Knight Frank Research

Table 4: Upcoming metro rail network

Name	Connectivity	Description	Current status	Expected completion
Rail Network				
Pune Metro Rail Corridor I	Pimpri Chinchwad - Shivajinagar - Swargate	Will enhance the connectivity between North and South Pune	Pre-bidding stage	Post 2020
Pune Metro Rail Corridor II	Ramwadi - Pune Station - Vanaz	Will connect the heavy traffic route between East and West Pune		

Source: Knight Frank Research

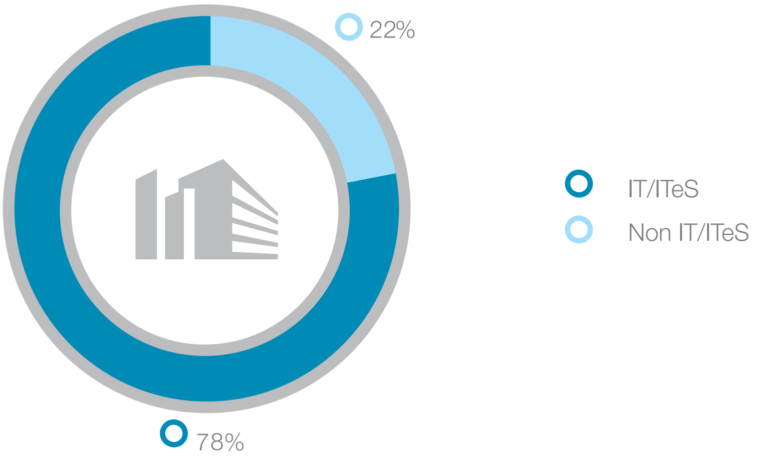
2.
Top investment destinations

What will drive Pune's residential real estate market?

The residential market demand in Pune will be driven primarily by two factors - employment generation and infrastructure development. Historically, the manufacturing sector has been the largest contributor to employment generation, with the engineering, automobile and auto ancillary sectors dominating it. However, over the last 15 years, the IT/ITeS sector has emerged as the largest employer in the city, and consequently, emerging as the biggest driver of the city's real estate market. Currently, out of the total office space stock of over 57 mn sq ft, 78% (Chart 3) is represented by the IT/ITeS sector.

Going forward, the IT/ITeS sector will continue to dominate the office space landscape in Pune. Factors such as affordable office rents, the availability of a talent pool, favourable state government policies and a conducive business environment will continue to attract IT/ITeS sector occupiers to the city. While the manufacturing sector will also witness a healthy growth, it will no longer be the leading employer in the city. This reaffirms our argument that the IT/ITeS sector will drive the real estate market of the city in the coming five years.

Chart 3: Office space break-up



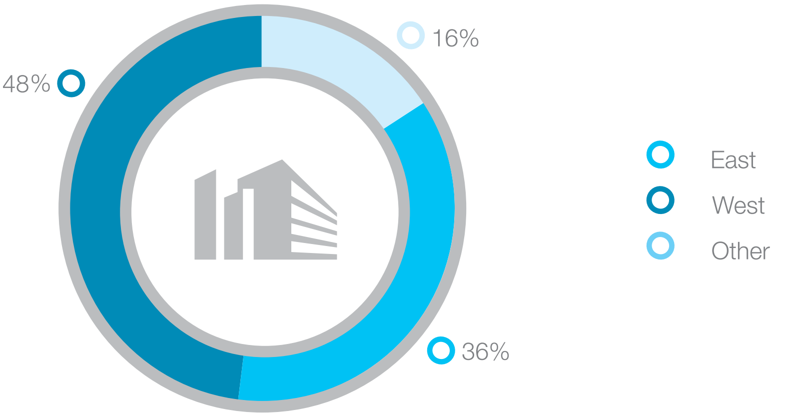
Source: Knight Frank Research

The heavy dependence of Pune's working population on the roads for their daily commute, along with the absence of an MRTS, has resulted in homebuyers preferring to stay in close proximity to their workplaces. This has helped the residential markets of East and West Pune develop at a much faster pace than the rest of the city.

Which regions in Pune will dominate the real estate landscape?

Pune's office market is distributed broadly across the east and west zones. Currently, more than 80% of the city's office space stock (Chart 4) is accounted for by these two zones, while the remaining is spread across the central, north and south zones. Given the occupiers' strong preference for office locations in East and West Pune due to affordable rents, we do not foresee these dynamics changing over the next five years. This means that more than 80% of the city's white-collar workforce will have to travel either to East or West Pune.

Chart 4: Zone-wise split of office space



Source: Knight Frank Research

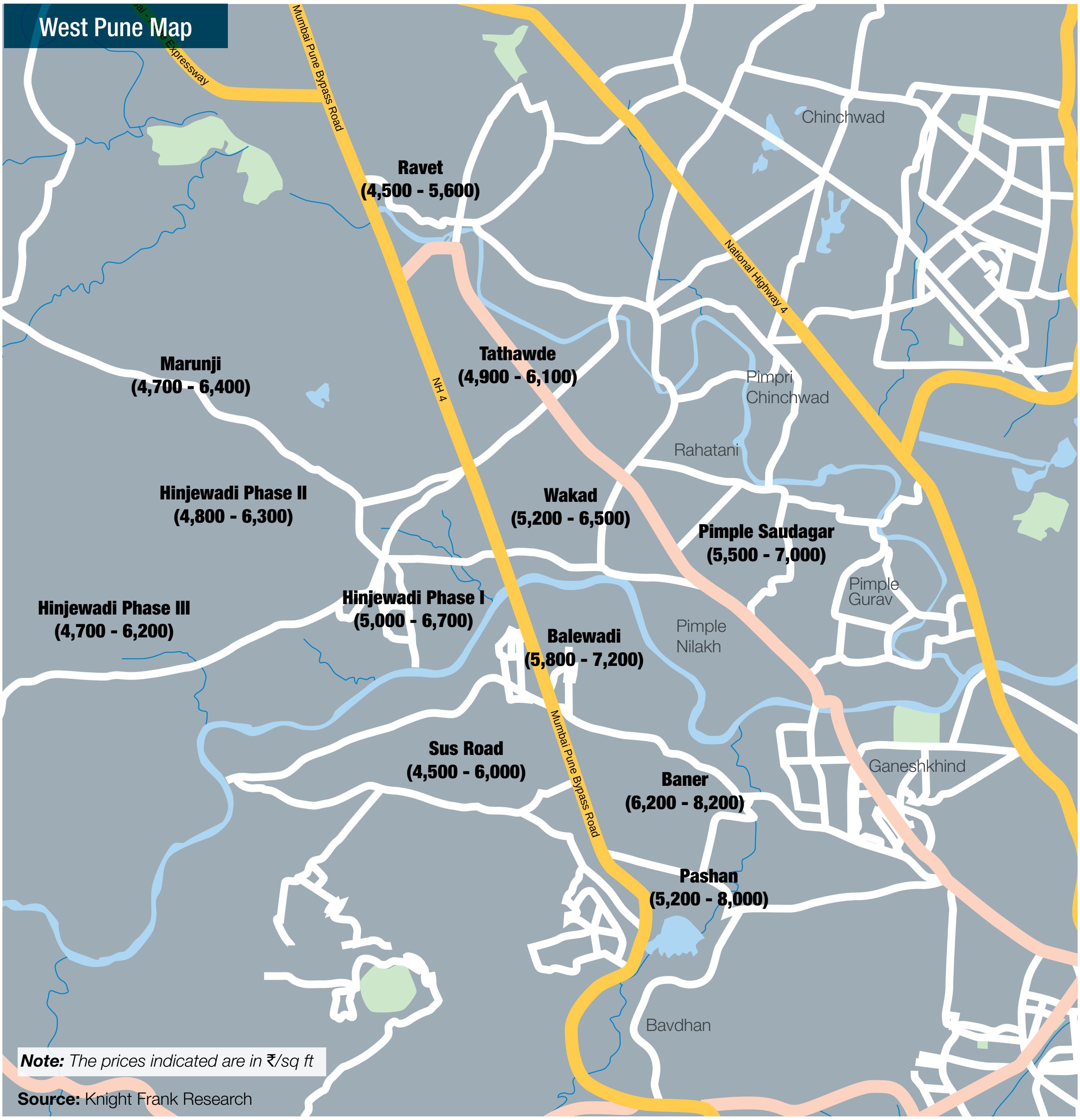
The biggest challenge that the city currently faces is the absence of a mass rapid transit system (MRTS). While the proposed metro rail network (Table 4) will come as a big relief to commuters in the city, it is still a long way from realisation, and we do not expect it to be operational before 2020. Additionally, the vast network of the under-construction bus rapid transit system (BRTS), which is expected to commence full operations by 2016 (Table 3), will also not provide direct connectivity to the major office locations in East and West Pune. Hence, a large section of the workforce will either have to travel via private vehicles or employer-provided transportation to reach their workplaces.

The heavy dependence of Pune's working population on the roads for their daily commute, along with the absence of an MRTS, has resulted in homebuyers preferring to stay in close proximity to their workplaces. This has helped the residential markets of East and West Pune develop at a much faster pace than the rest of the city. Since we do not foresee these dynamics changing in the next five years, we expect that the demand for new residential projects will continue to remain strong in East and West Pune, compared to the rest of the city.

Why will residential prices in West Pune grow at a slower rate compared to East Pune despite strong demand from homebuyers?

West Pune currently accounts for nearly half of the total office space stock (Chart 4) in Pune. The Hinjewadi area itself holds more than 90% of this stock. Due to low rents, ample availability of vacant land, strong preference of occupiers and the rapid development of social infrastructure, the majority of the new office space in the coming five years will also be located in Hinjewadi. As discussed earlier, the absence of an MRTS and heavy dependence on road travel by the workforce will continue to drive the demand for residential projects located close to Hinjewadi.

Currently, residential projects in Hinjewadi are in the range of ₹4,700 - 6,700 per sq ft. However, locations such as Wakad, Marunji, Tathawade, Ravet, Balewadi, Sus Road, Baner, Pimple Saudagar and Pashan, which are a 15-20 minute drive from the office hub of Hinjewadi, are also in similar ranges (West Pune map). The narrow price difference between these markets provides ample options for homebuyers working in Hinjewadi within a commutable distance of 15-20 minutes. This could limit the upside potential of prices in these locations despite a strong demand outlook. Additionally, there is sufficient availability of vacant land beyond Hinjewadi Phase III, Marunji, Nande-Balewadi Road and Sus Road, which has the potential to develop into residential markets, going forward. Since these markets will continue to witness an incremental supply at a marginally lower price, the price appreciation will be muted in West Pune over the coming five years. Hence, prices in West Pune will grow at a slower rate compared to East Pune despite strong demand from home buyers.



West Pune Map

Note: *The prices indicated are in ₹/sq ft*

Source: Knight Frank Research

Top investment destinations: Vishrantwadi and New Airport Road in Viman Nagar

East Pune presently accounts for 36% of the total office space stock spread across multiple locations, namely Yerwada, Kalyani Nagar, Viman Nagar, Kharadi and Hadapsar. Unlike West Pune, where the majority of the office stock is concentrated in one location (Hinjewadi), offices in the east are evenly spread across these locations. Since the working population in East Pune does not have to commute to a single office destination, the residential market here is distributed quite evenly across several locations, namely Viman Nagar, Dhanori, Wagholi, Kharadi and Hadapsar.

Note: *The prices indicated are in ₹/sq ft*

Source: Knight Frank Research

What will drive residential demand in these destinations?

Proximity to employment hubs and infrastructure development will be the primary drivers of residential demand in these investment destinations. In terms of employment, locations such as Yerwada, Airport Road, Kalyani Nagar and Viman Nagar together have an office space stock of more than 12 mn sq ft (nearly 150,000 employees), which is nearly 50% of the total existing office space stock in East Pune. Additionally, over the next two years, more than 1 mn sq ft of incremental office space will become operational in these office hubs, which is equivalent to around 12,000 employees. Since Vishrantwadi and New Airport Road are a 5-20 minute drive from these employment hubs, we believe that homebuyers would prefer to reside in these areas.

In terms of infrastructure, the Vishrantwadi to Sangamwadi BRTS (Table 3) is already under operation since August 2015. This route will be extended to Wagholi via Nagar Road in the coming two years, post which Vishrantwadi will be connected to all the major employment hubs on this road. The proposed Pune Metro Corridor II (Table 4), which will connect Viman Nagar to the city centre via Pune station, will also be easily accessible from Vishrantwadi and New Airport Road. Although the metro project is still at the pre-bidding stage and we do not foresee it commencing operations before 2020, it will eventually help these locations in terms of connectivity.

Unlike the physical infrastructure projects that are still under progress, access to social infrastructure from Vishrantwadi and New Airport Road is excellent. All the major retail, entertainment, medical and educational hubs (Table 5) are a 10-20 minute drive away. The airport and railway station are also in close proximity to these destinations. Considering all these factors, we believe that the demand for residential projects will continue to remain strong in these destinations in the coming years.

> Since Vishrantwadi and New Airport Road are a 5-20 minute drive from all the major employment hubs on Nagar Road, we believe that homebuyers would prefer to reside in these areas.

Table 5: Connectivity from Vishrantwadi and New Airport Road

	Vishrantwadi		**New Airport Road in Viman Nagar**	
	Distance (km)	**Travel time by road (min)**	**Distance (km)**	**Travel time by road (min)**
Bechmark locations				
Kalyani Nagar	5 - 6	15 - 20	4 - 5	10 - 12
Viman Nagar	5 - 6	10 - 15	2 - 3	4 - 5
Employment hubs				
Commerzone, Yerwarda	1 - 2	4 - 5	5 - 6	10 - 12
Business Bay, Airport Road	3 - 4	10 - 12	4 - 5	12 - 15
Techpark One, Airport Road	3 - 4	10 - 12	4 - 5	12 - 15
Binarius, Airport Road	3 - 4	10 - 12	4 - 5	8 - 10
Cerebrum IT Park, Kalyani Nagar	6 - 7	18 - 20	5 - 6	15 - 20
Marisof, Kalyani Nagar	6 - 7	18 - 20	5 - 6	15 - 20
Weikfield ITCiti InfoPark, Viman Nagar	5 - 6	12 - 15	2 - 3	5 - 8
Gigaspaces, Viman Nagar	5 - 6	12 - 15	2 - 3	5 - 8
E Space, Nagar Road	7 - 8	18 - 20	3 - 4	10 - 12
Tansportation hubs				
Pune airport	5 - 6	10 - 15	3 - 4	8 - 10
Pune railway station	7 - 8	20 - 25	8 - 10	25 - 30

Table 5: Connectivity from Vishrantwadi and New Airport Road

	Vishrantwadi		New Airport Road in Viman Nagar	
	Distance (km)	**Travel time by road (min)**	**Distance (km)**	**Travel time by road (min)**
Retail hubs				
Phoenix Market City, Nagar Road	6 - 7	18 - 20	3 - 4	8 - 10
Inorbit Mall, Nagar Road	6 - 7	18 - 20	3 - 4	8 - 10
Mariplex Mall, Kalyani Nagar	6 - 7	18 - 20	4 - 5	12 - 15
Nitesh HUB, Koregaon Park	6 - 7	18 - 20	5 - 6	15 - 20
Hospitals and educational institutes				
Jehangir Hospital	6 - 7	20 - 25	8 - 9	20 - 25
Ruby Hall Clinic	6 - 7	20 - 25	8 - 9	20 - 25
Shree Hospital and Diagnostic Centre	4 - 5	10 - 12	5 - 6	10 - 12
Sahyadri Speciality Hospital	3 - 4	10 - 12	4 - 5	10 - 12
Don Bosco High School	4 - 5	10 - 12	5 - 6	10 - 12
The Bishop's School	6 - 7	18 - 20	3 - 4	10 - 12
St. Felix High School	5 - 6	12 - 15	6 - 7	15 - 20
Symbiosis Centre for Management Studies	4 - 5	10 - 12	1 - 2	2 - 3

Source: Knight Frank Research

> Over the next two years, the employment hubs of Yerwada and Airport Road will witness an incremental supply of nearly 1 mn sq ft of office space. This will create a latent demand for housing in the residential localities that are in close proximity to these employment hubs.

Why will prices appreciate in these destinations?

Kalyani Nagar, a 15-20 minute drive from Vishrantwadi and 10-12 minute drive from New Airport Road, is considered the most sought-after residential market in East Pune. Easy access to the city centre via Koregaon Park, well established physical and social infrastructure and limited availability of vacant land for real estate development make this market the most premium residential destination in East Pune. For the purpose of this report, we have considered Kalyani Nagar as the benchmark location for East Pune. This means that residential prices in most of the locations in East Pune will be guided by this market in the coming years. The current prices in Kalyani Nagar are in the range of ₹9,000 -14,000 per sq ft.

Over the next two years, the employment hubs of Yerwada and Airport Road will witness an incremental supply of nearly 1 mn sq ft of office space (around 12,000 employees). This will create a latent demand for housing in the residential localities that are in close proximity to these employment hubs. While Kalyani Nagar will witness strong demand due to its proximity to these office hubs, the prevailing prices could limit the homebuyers' affordability. This latent demand is likely to spill over to other residential localities that are priced lower than Kalyani Nagar and are in close proximity to Yerwada and Airport Road. Vishrantwadi and New Airport Road, which are a 5-15 minute drive (Table 5) from these hubs, would reap the benefits of this situation.

Current prices in Vishrantwadi and New Airport Road are in the range of ₹5,600 - 6,800 per sq ft and ₹6,500 - 8,000 per sq ft, respectively (Table 6). The other localities are either away from these employment hubs or are priced higher. Considering these factors, Vishrantwadi and New Airport Road make a very strong case for price appreciation.

Is there a threat of excess supply?

The ticket size for a 2-BHK residential property in Vishrantwadi and New Airport Road starts at ₹7.5 mn and can go up to ₹18 mn. This indicates that the majority of the available supply in these locations is in the premium segment, with minimal availability of 1-BHK type configurations. Close proximity to the airport has restricted the height of the buildings that can be constructed here. These factors have led to a limited number of new units being launched here in the last few years. Currently, less than 500 units are available for sale (excluding the resale market) in projects that are either under construction or recently constructed.

Going forward, we expect very few new projects to be launched in Vishrantwadi and New Airport Road, as most of the vacant land that was available for residential development has already been exhausted. This will restrict the scope for new residential supply entering the market. We believe that new unit launches will be in the range of 200-300 per annum in the coming five years. As the demand potential in these locations will be high, the incremental supply expected to enter the market will be absorbed easily. Hence, we do not foresee any threat of excess supply in these investment destinations.

How much price appreciation is expected?

Kalyani Nagar, the benchmark location in East Pune, will continue to attract homebuyers in the premium segment. However, as the prevailing prices are relatively unaffordable for the working population in the nearby employment hubs, the upside potential in the prices will be muted. We expect prices in Kalyani Nagar to increase by 26%, or less than 5% per annum, from the average of ₹11,500 per sq ft in 2015 to ₹14,500 per sq ft by 2020 (Table 6).

On the other hand, prices in Vishrantwadi and New Airport Road will grow at a much faster pace, as strong demand and restricted new supply will exert an upward pressure on prices. This will result in the existing discount between Kalyani Nagar and these locations to narrow down in the coming five years. We expect prices in Vishrantwadi and New Airport Road to appreciate by 56% and 63% respectively, from 2015 to 2020. The existing discount between

Kalyani Nagar and Vishrantwadi will reduce further, from 46% to 34% by 2020 (Table 6). Similarly, the existing discount between Kalyani Nagar and New Airport Road will come down from 37% to 19% (Table 6). However, prices in Kalyani Nagar will continue to remain marginally higher than these locations. The noise from the nearby airport disturbs residents of Vishrantwadi and New Airport Road. Since we do not expect this to change in the next five years, prices in these areas will continue to remain at a marginal discount compared to Kalyani Nagar.

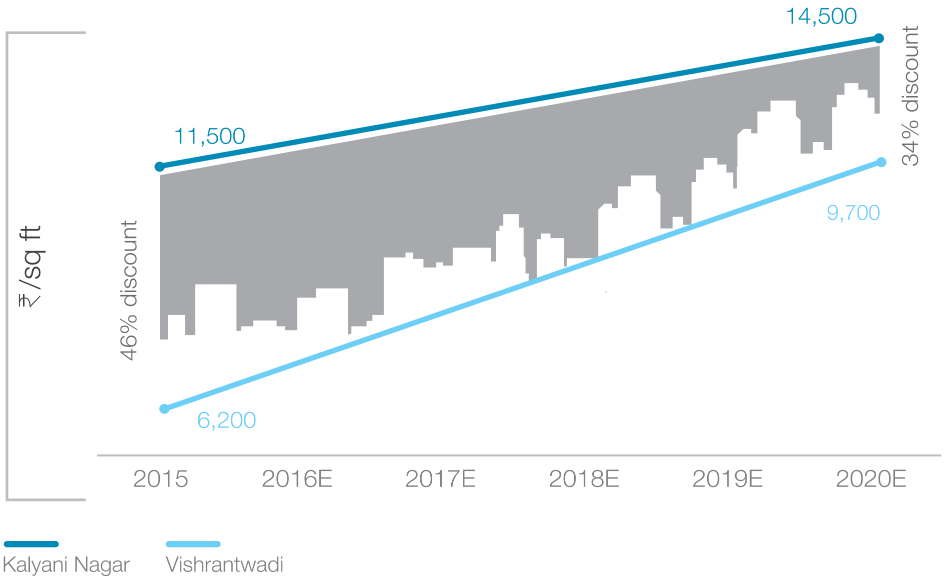
Table 6: Price movement in the benchmark location and investment destinations

	2015 (Price in ₹/sq ft)			2020E (Price in ₹/sq ft)			Price growth		Price discount	
	Min	Max	Avg.	Min	Max	Avg.	2015-2020E	Avg. annual	2015	2020E
Kalyani Nagar (benchmark location)	9,000	14,000	11,500	11,250	17,500	14,500	26%	4.7%		
Vishrantwadi	5,600	6,800	6,200	8,800	10,600	9,700	56%	9.4%	46%	34%
New Airport Road in Viman Nagar	6,500	8,000	7,250	10,500	13,000	11,800	63%	10.2%	37%	19%

Note: *The price growth and discount from 2015 to 2020 is calculated on the average price of that location*

Source: Knight Frank Research

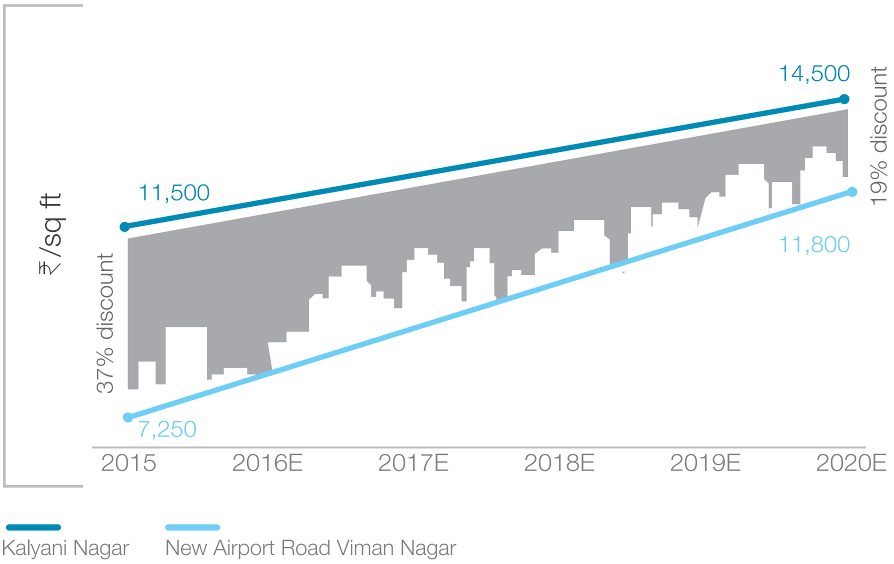
Chart 5: Price movement in Vishrantwadi



Note: *The prices indicated in this chart are the average prices of those locations*

Source: Knight Frank Research

Chart 6: Price movement on New Airport Road in Viman Nagar



Note: *The prices indicated in this chart are the average prices of those locations*

Source: Knight Frank Research

Is there any precedence to such a trend?

Kalyani Nagar in 2010 was in a similar situation as to what Vishrantwadi and New Airport Road are in 2015. In 2010, prices in Kalyani Nagar were at ₹7,000 per sq ft. Koregaon Park, which was considered the benchmark location for Kalyani Nagar at that time, was quoting ₹12,000 per sq ft. Easy access from Kalyani Nagar to Koregaon Park through the Aga Khan Bridge, and the presence of various IT/ITeS offices in Kalyani Nagar resulted in the price discount between these two markets narrowing down over a five-year period. Since 2010, the discount between these markets has come down from 42% to less than 18%. While prices in Koregaon Park are currently at ₹14,000 per sq ft, prices in Kalyani Nagar are just 18% lower, at ₹11,500 per sq ft. We believe that Vishrantwadi and New Airport Road will follow a similar pattern in the coming five years.

3.

Review of the previously-recommended investment destinations

The previously recommended investment destinations in Pune have performed below our expectations in terms of price appreciation till 2015. In 2012, we had projected a five-year price growth for locations such as Hinjewadi, Wakad, Tathawade and Ravet, in the range of 91% to 100%. However, in the first three years of our projected time horizon, prices increased in the range of 28% to 50%, which is considerably less than our initial estimates.

The biggest hurdle faced by these markets in terms of price appreciation is the ample availability of vacant land in the vicinity. As prices in these locations started rising post 2012, developers launched new projects in areas such as Marunji, Nande-Balewadi Road and Sus Road at a much lower rate, as they were able to purchase relatively low-cost land in these markets. Since these upcoming areas are just a 10-15 minute drive away from Hinjewadi and quoted a significantly lower price, homebuyer interest shifted towards residential projects in these locations. Thus, stiff competition from such locations within West Pune limited the upside potential in our previously recommended investment destinations.

Apart from competition from new locations in the vicinity, price rise in these investment destinations was also restricted due to a significant slowdown in the overall demand for housing on the back of a deteriorating economic sentiment in the country during 2013 and 2014. Though prices have appreciated despite a tepid demand scenario, they fell considerably short of our expectations.

Over the next two years, we continue to foresee competition from nearby relatively lower-priced locations, and this will restrict the upside potential even further. Hence, we forecast price appreciation to be limited, in the range of 10% to13% in the coming two years for Hinjewadi, Wakad, Tathawade and Ravet. Considering this, the effective price rise from 2012 to 2017 on the basis of our new estimates will be 70% for Hinjewadi. Similarly, it will be in the range of 42% to 44% for Wakad, Tathawade and Ravet. We recommend investors in these markets to hold on to their investments for two years more, since the price appreciation will still be higher than the average price rise in the city, post which they may exit at the end of 2017.

Table 7: Review of the previously recommended investment destinations (₹/sq ft)

	Average price (/sq ft)			**Price growth**					**Recommended action**
	Recommended at	Current	New estimate	Projected during 2012	Realised till 2015	Revised estimate		New estimate	
	2012	2015	2017	2012-2017	2012-2015	2015-2017	Average annual	2012-2017	
Hinjewadi	4,000	6,000	6,800	100%	50%	13%	6.5%	70%	Hold
Wakad	4,500	5,800	6,500	91%	29%	12%	5.9%	44%	Hold
Tathawade	4,300	5,500	6,200	98%	28%	13%	6.2%	44%	Hold
Ravet	3,950	5,100	5,600	97%	29%	10%	4.8%	42%	Hold

Source: Knight Frank Research

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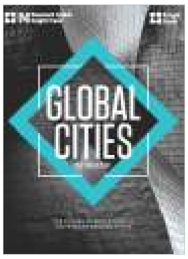

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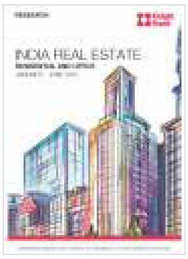

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