

PARKING REGULATIONS AND HOUSING AFFORDABILITY:

**A Comparative Review of Kerala,
Tamil Nadu and Andhra Pradesh**



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LIST OF ABBREVIATIONS

AB	Assembly Bill (California)
AP	Andhra Pradesh
BDA	Bangalore Development Authority
BIS	Bureau of Indian Standards
CEPT	Centre for Environmental Planning and Technology (CEPT University), Ahmedabad
CMA	Chennai Metropolitan Area
CO ₂	Carbon dioxide
CPPR	Centre for Public Policy Research
CREDAI	Confederation of Real Estate Developers' Associations of India
CSE	Centre for Science and Environment
CUMTA	Chennai Unified Metropolitan Transport Authority
DCPR	Development Control and Promotion Regulations (Mumbai)
DES	Directorate of Economics and Statistics (Kerala)
ECS	Equivalent Car Space
EV	Electric Vehicle
EWS	Economically Weaker Section
FSI	Floor Space Index
G.O. / G.O.Ms.	Government Order / Government Order (Manuscript series)
GST	Goods and Services Tax

LIST OF ABBREVIATIONS

ITDP	Institute for Transportation and Development Policy
KMBR	Kerala Municipality Building Rules
LIFE	Livelihood, Inclusion and Financial Empowerment (Mission), Kerala
LIG	Low-Income Group
LSGD	Local Self Government Department
LTA	Land Transport Authority (Singapore)
MA&UD	Municipal Administration and Urban Development (Andhra Pradesh)
MBBL	Model Building Bye-Laws
MCHI	Maharashtra Chamber of Housing Industry
MIG	Middle-Income Group
MoHUA	Ministry of Housing and Urban Affairs
NBC	National Building Code of India
NMT	Non-Motorised Transport
PMAY-U	Pradhan Mantri Awas Yojana – Urban
PwD	Persons with Disabilities
RERA	Real Estate (Regulation and Development) Act, 2016
SRO	Statutory Rules and Orders
SUMP	Sustainable Urban Mobility Plan
TDR	Transferable Development Rights
TNCDBR	Tamil Nadu Combined Development and Building Rules
TOD	Transit-Oriented Development
VTPI	Victoria Transport Policy Institute

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Executive Summary

Indian building regulations include minimum parking requirements which affect the amount and cost of housing but have rarely been studied. This report examines the rules for residential parking under the state-specific building regulations in Kerala, Tamil Nadu & Andhra Pradesh. It analyses how the state rules impact housing of Economically Weaker Section (EWS), Low Income Group (LIG) and Middle Income Group (MIG) households. In all three states, parking requirements are set without reference to vehicle ownership, household income or access to public transport. All homebuyers pay for the parking, whether they own a car or not, which is impacting the affordability of houses for lower income segments, including government schemes like PMAY-U 2.0.

A typical development scenario is modelled to illustrate how the wording of a parking mandate determines who bears its burden. Kerala's per-unit rule, tightened by the 2025 amendment, is the most regressive: EWS projects lose 40 per cent of their potential housing capacity to parking, against 21 per cent for MIG projects, and parking makes up 22 per cent of the cost of an EWS unit, equal to about two-thirds of an EWS household's annual income. Tamil Nadu's size-based bands shield EWS housing, which loses only 10 per cent of its capacity, but place LIG units in the same band as MIG units, so LIG housing loses 24 per cent of its capacity and bears the heaviest income burden in the state. Andhra Pradesh's rule, set as a fixed share of built-up area, costs every income group 21–22 per cent of capacity and about 11 per cent of unit cost, offering no size-based relief for affordable housing.

Better alternatives include parking maximums in London, proof of parking in Japan, transit-oriented parking norms in Mumbai and parking policy proposed in Chennai in 2025, based on international and Indian experience. The report builds on these and recommends removal of parking requirements for dwelling units up to 60 sq m. It also proposes replacing minimum requirements with demand-based standards, with targeted maximums in areas close to public transport. Parking should be unbundled from the price of housing so households pay only for the parking they use. Local governments should be able to set parking norms that make sense for local conditions and shared parking between developments should be permitted.

Parking regulation is housing regulation, and reforming it is one of the most inexpensive ways to increase the supply of affordable homes.

1. Introduction - Context

The building byelaws of every Indian state include parking provisions that silently shape the urban environment, influencing road widths, neighbourhood densities, and housing affordability. Most Indian states and cities impose minimum parking requirements calibrated to floor areas for residential buildings and have provisions for additional mandatory visitor parking spaces. In contrast, international practice has shifted towards maximum parking caps, demand-side pricing and proof of parking spaces. For example, studies show that mandatory minimums inflate housing costs, induce car ownership, and exacerbate traffic congestion. This has led to a global paradigm shift. The ITDP's 2024 study (ITDP, 2024) notes that "poorly managed curb space and vehicle circulation and parking searches are significant contributors to congestion in dense urban areas." Some cities in India have taken steps in this direction, including Chennai, Pune and Bengaluru.

As with other development regulations, the numerical figure specified in a parking provision does not necessarily reflect the quantity a development actually requires. A minimum parking standard states a mandated quantity of off-street space per dwelling or per unit of floor area; however, how many vehicles a household will actually own, and therefore how much parking it actually needs, is a separate empirical question that the mandate fails to test. This chapter treats the gap between mandated parking supply and effective, demand-driven parking need as its organising distinction, mirroring how the preceding chapter distinguished stated FSI from effective FSI. Where a mandate significantly exceeds a building's actual parking need, it consumes floor area and incurs construction costs that could otherwise be allocated to habitable space. Ultimately, this financial burden is priced into every dwelling unit, penalising buyers regardless of whether they own a vehicle.

The housing policy of the Indian government has increasingly focused on the supply side of affordable housing through a mix of direct housing schemes and fiscal incentives and credit support. They include Rajiv Awas Yojana (2009), Pradhan Mantri Awas Yojana, Affordable Rental Housing Complexes and the current Pradhan Mantri Awas Yojana-Urban 2.0 (PMAY-U 2.0). Launched in 2024, PMAY-U 2.0 aims to help build, buy or rent 1 crore urban houses over the next five years, with an emphasis on economically weaker sections and low- and middle- income households. Fiscal measures like concessional GST treatment for eligible affordable housing, direct tax incentives and credit support through priority sector lending are in place to support these interventions. The key policy goal is to reduce the cost of housing and increase the availability of formal housing for all income groups.

Parking regulation, however, can work in the opposite direction if minimum parking requirements are applied without reference to the characteristics of the households targeted by affordable-housing programmes. Mandatory parking occupies land and built-up areas and therefore adds to the cost of development, even when the housing itself is intended for lower-income households.

The relevance of this burden depends on whether the mandated parking reflects actual demand among the intended beneficiaries.

The three states analysed in this study exemplify different approaches to parking requirements.

In Kerala, affordable housing schemes where the size of dwelling units is below 66 sq.m and are in an individual plot, parking requirements are not imposed to ease the regulatory burden. While regulatory relief is available for affordable housing constructed under government schemes for individual EWS households, similar concessions on parking are not necessarily available to privately constructed housing or large housing apartment projects. This is significant given the scale of private construction in Kerala. According to the Directorate of Economics and Statistics, 2,91,217 residential buildings were constructed in the state in 2021–22, of which 2,86,731 were dwelling houses (DES 2024). By comparison, the LIFE Mission completed 4,71,442 houses between its launch in May 2017 and November 2025, an average of roughly 55,000 houses a year (Deshabhimani 2025). Government-supported housing therefore accounts for only about one in five new dwelling houses in the state. Most housing development falls outside scheme-specific regulatory relief, which may raise the cost of providing smaller, more affordable homes.

Tamil Nadu also has different parking requirements for different sizes of dwelling. TNCDBR does not require parking for units up to 25 sq m but requires a two-wheeler parking space in lieu of a car parking space for units between 25 and 50 sq m. One car space is required for every two dwelling units for units between 50 and 75 sq m. Thus, these provisions provide greater parking relief as the size of the dwelling unit decreases.

Andhra Pradesh has a different approach; the building regulations prescribe parking requirements as a proportion of built-up area mainly for residential apartment developments and not as a specific regime for EWS or LIG housing. The regulation thus makes no explicit differentiation between affordable and higher-value housing based on household income or beneficiary category.

This is an important distinction when considering the affordability effects of parking regulation. In PMAY-U 2.0, EWS households are those with annual household income up to ₹3 lakh, and LIG households are those with annual household income between ₹3 lakh and ₹6 lakh. However, it is not the income categories per se that drive parking requirements in the state building regulations. The link between affordable housing and parking is therefore predominantly indirect: **housing schemes determine the income and housing needs of beneficiaries, and building regulations determine the amount of land and floor area that must be made available for parking.**

2. Regulatory Framework

The majority of the states in India adopt the parking structure given in the National Building Code with regional modifications. The NBC includes technical specifications for parking dimensions, ramp gradients, turning radii, headroom clearance, basement ventilation and accessibility. Part 3 of NBC 2016 is the main NBC reference for development control and parking-related requirements. Part 4 applies where parking arrangements affect fire and life safety requirements. Indian parking standards commonly use the Equivalent Car Space (ECS) concept, under which the spatial requirement varies according to the form of parking. Commonly cited standards use approximately 23 sq m per ECS for open parking, 28 sq m for stilt/covered parking and 32 sq m for basement parking, although the precise standards adopted vary across states.

These spatial standards scale dynamically based on a building's typology. For example, residential group housing must generally provide 1 ECS for every 100-150 sqm of built-up area. Conversely, commercial premises such as offices and shopping malls are subject to more stringent requirements, with 1 ECS required for every 75-100 sqm of floor area. Besides this base line, MoHUA, through its Model Building Bye-Laws (MBBL) 2016 (which aims to convert NBC into a format that can be adopted by the states) prescribes a more aggressive norm of 2 ECS per 100 sqm for residential premises.

The fundamental limitation of the NBC framework lies in its philosophy of enforcing minimum thresholds rather than maximum caps. Furthermore, it fails to link parking requirements to public transport accessibility and remains entirely silent on demand-side parking pricing or on-street management. The inadvertent consequence of this regulatory blind spot is the incentivisation of car ownership, which directly accelerates urban vehicle density and its associated negative externalities. The NBC (and the model bylaws based on it) creates a statutory minimum for parking requirements instead of a strategic ceiling, linking this minimum to arbitrary floor area ratios rather than to actual vehicle ownership rates, which leaves the dilemma unresolved at the national level. Consequently, the responsibility falls upon individual states. As the state-wise analysis below demonstrates, state governments address this challenge unevenly.

Besides these structural codes, judicial precedent heavily shapes the legal landscape. The landmark case *In Nahalchand Laloochand Pvt. Ltd v. Panchali Co-operative Housing Society Limited* (2010) held by the Supreme Court that stilt parking is a part of the common areas and facilities within the framework of the Maharashtra Ownership Flats Act and cannot be sold separately by the promoter.

The Real Estate Regulatory Authority (RERA) lays down an important regulatory framework for the manner in which parking is included in real estate projects. The parking and circulation plan is clearly part of the definition of a sanctioned plan as given in the Act, and open parking areas are part of the common areas of a real estate project as per Section 2(n)(iii). This legislation thereby distinguishes the imposition of parking obligations from the regulation of parking in a registered

project. While building regulations control the amount of parking a developer has to provide, RERA ensures that the promoter follows the sanctioned plan and also controls the treatment and disclosure of parking to allottees.

3. State-Specific Regulations on Parking

The residential parking norms in Kerala, Tamil Nadu and Andhra Pradesh can be broadly categorised into two distinct categories, namely single dwelling units (individual houses) and group housing (apartments and multi-family complexes). Parking mandates are directly related to the plot size or the built-up area for single-dwelling units at the unit level. Group housing and apartment complexes have requirements calculated on an ECS per dwelling unit formula stratified by size bands or an ECS per 100 sqm matrix of total floor area with mandatory visitor parking allocations.

The statutory frameworks and practical implications are presented together in each state subsection to maintain analytical cohesion. The following spatial and economic analyses build a coherent picture of the unique regulatory character of each jurisdiction.

3.1 Kerala

In Kerala, Rule 29 of the Kerala Municipality Building Rules (KMBR), along with its appended schedule, governs off-street parking mandates. The framework dictates that every new construction exceeding a stipulated size threshold must provide a designated quota of off-street parking entirely within the property boundaries.

Table 1: Parking mandate for group housing and apartments (Group A1), Kerala Municipality Building Rules

Flat (Dwelling Unit) Size	KMBR Residential ECS
Up to 75 sq m	1 off-street car parking space for every 2 dwelling units. (2025 Amendment)
75–185 sq m	1 off-street car parking space for every dwelling unit.
185–300 sq m	1.5 off-street car parking spaces for every dwelling unit.
Above 300 sq m	2 off-street car parking spaces for every dwelling unit.
Visitor parking (add-on)	15% of total car parking
Two-wheeler (mandatory)	25% of the area of mandatory car parking
Differently abled bays	3% of the required parking, subject to a minimum of one car space

For lodging houses (Group A2), KMBR ties parking to total floor area rather than to number of rooms/units.

- Group A2 requires one car space per 90 sq. m of floor area up to 1,170 sq. m and one per 60 sq. m thereafter. The requirement is reduced to
 - a minimum of 50% of this figure in hostels
 - a minimum of 25% of this figure in hostels attached to an educational institution, old age home, retirement home, senior citizen community living facility, seminary/convent, or orphanage.

3.1.1 Changes in parking-related provisions – 2019 vs 2025 KMBR Rules

The inland fisherfolk population is estimated to be around 2.46 lakh. They reside in 113 inland fishing villages in Kerala. The district-wise details of fisherfolk are given in Table no 1.

Table 2: Changes in parking-related provisions, KMBR 2019 Rules and 2025 Amendment Rules

Provision	2019 Rules	2025 Rules	Policy Implication
Parking requirement for small dwelling units	One car parking space for every three dwelling units up to 75 sq. m	One car parking space for every two dwelling units up to 75 sq. m	Increases mandatory parking by 50% for small apartments, raising construction costs and reducing land available for productive use.
Basis for calculating dwelling unit size	Based on built-up area	Based on total floor area, measured from the exterior face of external walls and the centre line of common walls	Provides greater clarity and uniformity in determining applicable parking standards.
Car parking space dimensions	Minimum area of 15 sq. m and length of 5.5 m	Standardised dimensions of 5.5 m × 2.7 m (6.0 m × 2.7 m for parallel parking)	Introduces a clear dimensional standard, improving consistency in design and enforcement.
Two-wheeler parking	Area equivalent to 25% of car parking requirement	Specified as parking units of 3 sq. m (minimum dimension 1.5 m), rounded up, with a minimum 1.2 m access driveway	Establishes measurable standards, reducing ambiguity in implementation.

Two-wheeler parking	Area equivalent to 25% of car parking requirement	Specified as parking units of 3 sq. m (minimum dimension 1.5 m), rounded up, with a minimum 1.2 m access driveway	Establishes measurable standards, reducing ambiguity in implementation.
Visitor parking	15% of parking space	15% of the number of mandatory parking spaces	Clarifies interpretation and improves regulatory certainty.
Basement circulation	Minimum aisle width of 4.5 m; two-way ramps generally required	Aisle width reduced to 4.0 m; buildings accommodating up to 75 cars may provide a single 3.5 m one-way ramp.	Reduces basement construction costs and improves space efficiency. A typical 70-car basement may save approximately 150 to 200 sq. m, equivalent to about 5 to 7 additional parking spaces or other usable areas.
Off-site parking	Not permitted for residential buildings	Off-site parking within 200 m is permitted only for non-residential occupancies.	Residential developments must continue to accommodate all mandatory parking within the project site.
Mechanised parking	Maximum 50% of required parking; minimum headroom of 2 m	Maximum 50% retained; headroom requirement removed; boundary clearance requirements specified; one adjacent queuing bay required	Provides greater flexibility in mechanised parking design while maintaining operational requirements.
Fire tender turning radius	A minimum turning radius of 9 m prescribed	Requirement omitted	Simplifies site planning, although fire safety continues to be governed by other provisions of the Rules and the National Building Code.
Electric vehicle charging	No mandatory provision	EV charging infrastructure is mandatory for all buildings requiring parking; the number of charging points is to be notified separately by the Government	Future-proofs residential developments by integrating electric mobility infrastructure.

3.1.2 Small dwelling units and affordable housing: The Kerala Municipality Building (Amendment) Rules, 2025, considerably raise the supply-side compliance burden in the affordable housing segment. Specifically, the amendment raises the minimum parking requirement for small-scale units from one space for every three units (a 33 percent ratio) under the 2019 Rules to one space for every two units (a 50 percent ratio). This change drastically increases the cost of construction compliance in the very segment of the market that caters to low-income buyers. In addition, some non-residential typologies are allowed waivers or flexibility for in-situ (on-site) parking, whereas residential developments are not afforded such respite and are mandated to provide on-site provisions. Rule 55 of the KMBR provides exemptions from certain requirements such as FSI, coverage, off-street parking and access width for buildings in individual plots under approved schemes where the total floor area of each dwelling unit is less than 66 sq m to cater to the needs of low income groups.

3.1.3 Mechanised Parking: Rule 29(10) caps mechanised parking at 50 percent of the mandatory off-street car parking requirement. The cap is defined by the number of spaces rather than the ground footprint they occupy. This distinction matters because mechanised systems stack vehicles vertically. For example, a two-tier stacker accommodates two cars on the footprint of one conventional space. For a project requiring 100 car spaces, a conventional layout at 28 sq. m per space occupies about 2,800 sq. m. If the 50 mechanised spaces permitted under the cap are provided as two-tier stackers, they need only 25 conventional footprints. The mechanised half then occupies about 700 sq. m, and the parking footprint falls to about 2,100 sq. m, a saving of 25 percent. The other 50 spaces, however, must still be provided as conventional parking, and their 1,400 sq. m cannot be reduced through mechanisation. Without the cap, the same project could meet its entire requirement with two-tier stackers in about 1,400 sq. m, halving the footprint. By fixing the ceiling in terms of space count, the provision locks half of the mandatory parking into conventional layouts. This limits the land savings that vertical parking could otherwise deliver on constrained urban plots.

3.1.4 Analysis: Taken together, Kerala's regulatory changes move in opposite directions. The increase in the minimum parking requirement adds pressure on small and affordable housing units built outside of approved schemes and those between dwelling-size units of 66 sqm and 75 sqm, without clear evidence of rising car ownership among low-income households. The provision for mechanised parking is intended to reduce space constraints, but the ceiling imposed by the rules limits its impact. The 2025 amendment therefore places an additional burden on affordable housing while limiting the design solutions that could help address the space required for parking. The mandatory two-wheeler parking tied to an area equivalent to 25% of the car parking requirement is an additional burden on the builder, raising the costs of the individual dwelling units.

3.2 Tamil Nadu

The Tamil Nadu Combined Development and Building Rules (TNCDBR), 2019, govern the state's structural and spatial mandates. Most recently amended in 2024 and 2025, the framework details

its residential parking standards within Annexure IV (referenced by rules 38(4) and 39(8)). The current statutory matrix scales parking obligations directly against the floor area of dwelling units:

- Floor area up to 25 sq. m: Nil
- Floor area above 25 sq. m and up to 50 sq. m: One two-wheeler space
- Floor area above 50 sq.m and upto 75 sq. m: 1 car space for every 2 dwelling units and 1 two-wheeler space for every dwelling unit
- Floor area above 75 sq. m: 1 car space for every 75 sq. m

3.2.1 Visitor Parking: Where developments exceed six dwelling units, developers must provide mandated visitor parking equivalent to 10 percent of the baseline requirement, rounded to the nearest whole number. For residential complexes, these calculations are strictly bound to the net size of the individual dwelling unit, explicitly excluding shared real estate such as common corridors and staircases. However, where baseline prescriptions are derived from total Floor Space Index (FSI) metrics, the required parking volume is calculated against 75 percent of the building's total plinth area.

3.2.2 Parking for persons with disabilities (PwD): Buildings with a height of more than two storeys shall earmark 10 percent of the required parking capacity, with a minimum of two vehicle and two two-wheeler spaces strictly reserved for persons with disabilities (PwD) to ensure inclusive design. These places should be strategically placed near main entrances to provide easy access to staircases and lifts. Importantly, the TNCDBR does not specify a turning radius but just requires “sufficient” space; therefore, unlike fire codes, this geometry is completely independent of the dimensions of emergency fire apparatus.

3.2.3 Recent Amendments: The state's successive amendments create unique regulatory pathways. In 2024, Rule 35(1)(a) was amended to address supply-side structural constraints for non-high-rise buildings with up to 16 dwellings. The amendment allowed an additional habitable level to be included in the normal approval process by increasing the maximum height for a stilt plus three-storey arrangement from 12m to 14m. This permits developers to increase density without the strict, increased scrutiny assigned to buildings within the range of 14 metres to 18.30 metres.

But the 2025 amendment was a huge paradigm shift, where a maximum parking limit model was adopted for single-family residences. Under the revised table, single dwelling units with a built-up area of up to 300 sq. m may provide a maximum of two car spaces and two two-wheeler spaces. Units with a built-up area above 300 sq. m may provide a maximum of four car spaces and four two-wheeler spaces.

While limited to single-family, low-density housing, this is a progressive departure from the conventional demand-blind minimum paradigm. Commercial buildings and high-density housing are still subject to earlier minimum-threshold regulations.

Box 1: CUMTA Parking Policy for the Chennai Metropolitan Area (2025)

Chennai Unified Metropolitan Transport Authority (CUMTA) Parking Policy for Chennai Metropolitan Area (2025) : The Parking Policy for the Chennai Metropolitan Area, prepared by the CUMTA and approved by the Government of Tamil Nadu in January 2025, is a move towards demand side management in addition to building-code norms. The policy calls for area-based parking management plans that would charge for on-street parking based on demand and limit on-street parking around metro stations. It also suggests an alternative long-term proof-of-parking measure at the time of vehicle registration such as Japan's Shako Shomeisho system. The policy requires that parking revenues be earmarked for a dedicated urban transport fund for pedestrian and non-motorised transport (NMT) infrastructure. This off-street management approach, if enacted, could offer the institutional framework for the elimination of rigid building code minimums, pushing private vehicle storage out of residential developments and into actively managed, market-priced facilities. (The Hindu. 2025)

3.2.4 Analysis

- Under TNCDDBR, the Annexure IV schedule mandates one car space for every two dwelling units within the 50–75 sq. m floor-area band. Because this ratio applies uniformly across all income segments, it imposes a similar per-unit parking burden on compact, lower-cost housing in the 50 sq.m - 60 sq.m band as it does on middle-income housing of that category, offering no separate reduction or lighter compliance tier for affordable housing. *Under the PMAY scheme, the dwelling unit size of EWS is ≤30 sq m, LIG-A is 31–40 sq m, and LIG-B is 41–60 sq m per unit size carpet area.*
- Annexure IV contains no provisions for mechanised parking. Consequently, builders lack a rule-based mechanisation pathway to unlock space savings on spatially constrained plots. When mechanised systems are deployed in practice, they fall outside the conventional dimensional and access standards set for parking space and aisles, leaving their legal and regulatory treatment ambiguous.
- Demand-responsive reform: maximum cap replacing the former minimum of 1 car space per 75 sq.m floor area. It eliminates the need for larger single dwellings to devote floor space to vehicles whether or not the household has them. But the reform has limited impact. The cap is for single-family residential units only, meaning apartment complexes and commercial buildings still have to meet the earlier minimum requirements. The net effect on housing costs should therefore be limited. Moreover, restricting off-street parking without regulating on-street parking may cause a transfer of parking demand to public streets.

Thus, Tamil Nadu is the only state in this study to convert a residential parking minimum into a maximum cap. But the reform applies to single dwelling units which constitute a small portion of the new urban housing supply and for which the aggregate cost of oversupply is therefore limited. The greater distortion is in group housing. The ratio of uniformity in the 50–75 sq. m band is applicable there regardless of the income of the households it affects and is unchanged.

3.3 Andhra Pradesh

Residential parking is primarily governed by the Andhra Pradesh Building Rules 2017 (Rules 6, 57 and 67) as a fixed percentage of built-up area, rather than a dwelling-unit-based parking standard. Table 11 of the AP Building Rules 2017 states that residential apartment complexes shall allocate 20 percent of the total built-up area for parking. The mandate is uniform across all municipal corporations, municipalities and panchayat areas. Therefore, the framework does not distinguish the parking requirement by size of dwelling unit, income segment or total units in a project.

However, under Rule 6(30), considerable spatial flexibility exists in meeting this quota. The required parking can be provided in basements, cellars, stilts, upper floors, eligible open spaces or by means of a common pool parking arrangement. In apartment complexes on plots of up to 750 sq m, where the entire stilt floor is used for parking, the requirement is considered automatically satisfied. AP also requires the provision of visitor parking of at least 10% of the parking area as specified in Table 11. The rules require two dedicated, accessible spaces near the building entrance for persons with disabilities.

Table 3: Parking area as a percentage of built-up area, Table 11 read with Rule 6(30)(k), Andhra Pradesh Building Rules, 2017

Category of building/activity	Parking area as % of built-up area — Municipal Corporations & Selection/Special Grade Municipalities	Parking area as % of built-up area — First/Second Grade Municipalities, Nagar/Gram Panchayats, Development Authority areas
Multiplexes	60	50
IT-enabled services complexes, shopping malls (above 4,000 sqm)	50	40
Business buildings, cinema halls, hotels, kalyana mandapams, lodges, offices, other commercial buildings, restaurants & non-residential high-rise buildings/complexes	30	25
Colleges, godowns, hospitals, industrial buildings, institutional buildings, Residential Apartment Complexes , schools, educational buildings & other buildings	20	20

3.3.1 Flat 20% Built-Up Area Quota [Table 11]: Table 11 of the AP rules applies a uniform parking requirement of 20% of built-up area to all residential apartment complexes, irrespective of dwelling-unit size, income segment or affordability. A development comprising compact, lower-cost units therefore carries the same parking ratio as one comprising larger, higher-value units, with no adjustment for the likely differences in vehicle ownership or housing affordability.

3.3.2 Deemed Stilt Compliance [Rule 6(30)(c)]: For apartment complexes on plots up to 750 sq.m, leaving the entire stilt floor for parking is deemed sufficient to meet the requirement, irrespective of the number of dwelling units, the 20% built-up-area calculation or the actual number of usable bays after accounting for ramps, columns and permitted ancillary spaces. The provision therefore substitutes a simple structural test for a direct assessment of parking demand or capacity.

3.3.3 Strict On-Site Parking Mandate [Rule 6(30)(b)]: The rules require mandatory parking to be accommodated within the project site, through basements/cellars, stilt or upper floors, or eligible open spaces beyond the setbacks. Apart from the limited provision for shared basements between adjoining buildings, there is no clear pathway for off-site, off-plot or shared public parking. This places the full land and construction burden of parking provision on the individual development plot, even where nearby parking capacity may be available.

3.3.4 EWS/LIG Housing: Andhra Pradesh provides a useful illustration of the interaction between affordable-housing obligations and parking regulation. The State's building regulations require qualifying residential group-housing and group-development projects to provide EWS/LIG housing, with the developer permitted to provide either 10% of the total built-up area or 25% of the total number of units for these categories. EWS and LIG units are also subject to specified size limits. However, where EWS/LIG units are provided as part of a larger residential development, the affordable units are not generally assigned a distinct parking requirement based on their smaller size or lower-income beneficiary profile. They remain within the broader parking framework applicable to the development.

The regulations do provide a more explicit concession for exclusive affordable-housing projects. For such projects, parking requirements can be deemed to be met through provision of the entire stilt floor for parking, subject to the applicable site conditions.

3.3.5 Recent Amendments in Parking Norms

As per the new amendment, the following are the major changes in the parking provisions.

A. Updated Parking, Setback, and Height Regulations by Plot Size (Rule 57, Table-17)

The amendments substitute Table 17 to define updated permissible heights, stilt/cellar configurations, and setbacks based on plot sizes (See Annexure 1):

The Andhra Pradesh rules scale development permissions according to plot size, building height and parking requirements. Very small plots below 100 sq m receive relaxed norms, including no

mandatory parking and minimal front setbacks. As plot size increases, stilt parking and cellar floors become permissible or required, while setbacks progressively increase with building height. For plots above 1,000 sq m, buildings can reach 18 m, but this comes with substantially larger setbacks, including road-width-based front setbacks and side setbacks of up to 6 m. Plots above 2,500 sq m receive the greatest development flexibility, including multiple cellar floors, but also face larger setbacks.

Under the substituted Rule 57(5), the regulation permits heights above 15 m and below 18 m only when the plot abuts a road that is at least 12 m wide. The 18 m figure operates as an exclusive ceiling at 18 m and above; the building becomes high-rise and shifts to Table-18.

B. Deemed Parking Status with TDR Utilization (Rule 167)

When Transferable Development Rights (TDR) are utilized for constructing additional floors in residential complexes, specific exemptions apply to meet parking rules:

- **Stilt parking deemed sufficient:** In apartment complexes, buildings or residential blocks on sites up to 1000 sq m where TDR floors are permitted, the parking requirement is deemed to be met if the entire stilt floor is left exclusively for parking.
- **Cellar parking deemed sufficient:** Where the applicant constructs a Cellar + Ground + Four Upper Floors (G+4) residential building and the cellar is used exclusively for parking, the parking requirement is deemed to be met if the entire cellar floor is left for parking.
- **Threshold conditions:** TDR floors are not permitted at all where the existing road width is less than 9 m. Further, plots of 100–200 sq m are restricted to one additional TDR floor (subject to Table 17 setbacks), against up to two floors generally.
- **High-rise buildings:** High-rise constructions using TDR up to two additional floors, setback relaxations, or both receive no deemed-parking concession and remain fully subject to the standard parking norms alongside the all-round setbacks graded by total height (7 m up to 30 m, rising to 12 m above 70 m).

3.3.6 Analysis : The 2025 Andhra Pradesh amendments take a prescriptive, form-based approach to residential parking instead of calculating parking based on the number or size of apartments.

The amended rules clearly state that if a builder provides a stilt floor or a cellar in certain building configurations, the parking requirement is automatically considered satisfied. The approach taken by Andhra Pradesh eases ambiguities, fast-tracks the approval process, and reduces compliance costs.

Andhra Pradesh is consequently the clearest example, among the three states, of a parking mandate stated entirely in form rather than in demand: a percentage of built-up area and a structural test (does a stilt floor exist) stand in for any assessment of how many vehicles a given development is likely to generate. That design lowers approval friction and compliance costs, which is a genuine gain, but it does so by removing demand from the calculation altogether rather than by substituting a lighter, better-targeted demand estimate for a heavier one.

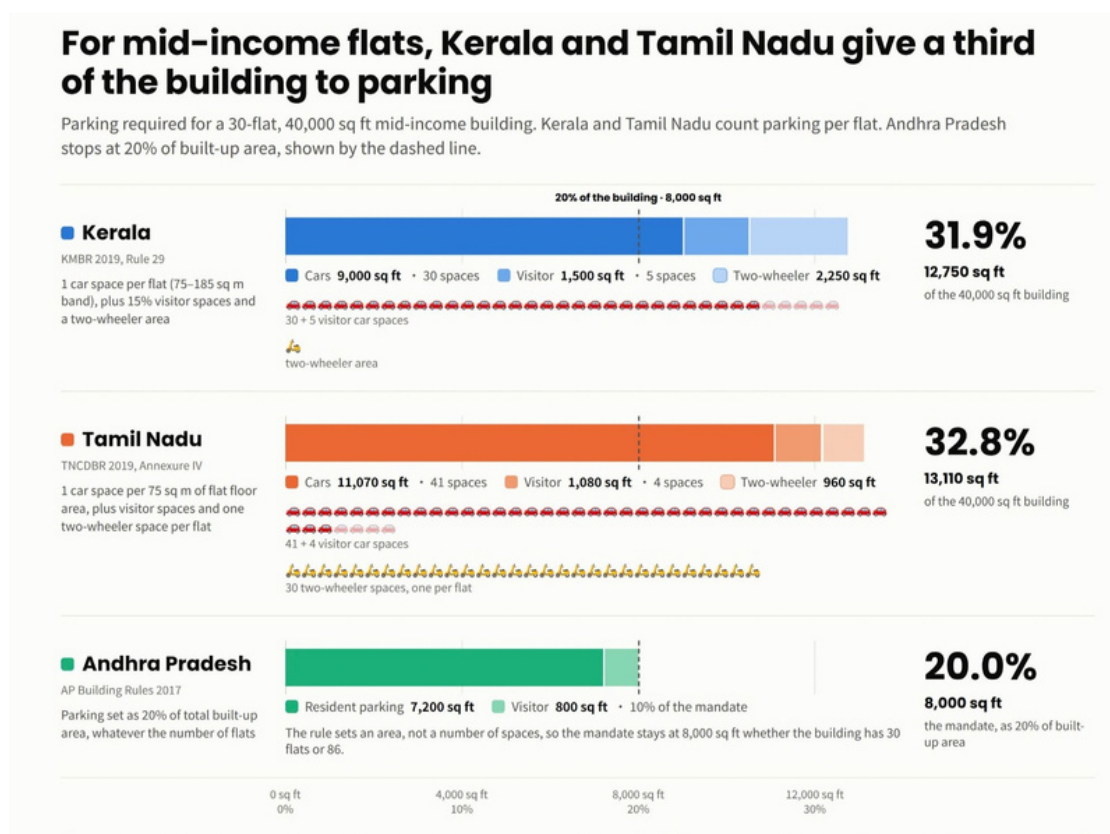
4. Cross-State Comparison

4.1 Basis of Comparison

The parking regulations in Kerala, Tamil Nadu, and Andhra Pradesh adopt different approaches to determining the amount and form of parking required in residential developments. While Kerala and Tamil Nadu differentiate parking requirements, at least to some extent, based on dwelling-unit size, Andhra Pradesh primarily links parking provision to the built-up area of the development. These differences have direct implications for the amount of land and floor space that must be allocated to parking, particularly in affordable and compact housing projects.

A meaningful comparison must therefore examine not only the numerical parking requirement but also the basis on which the requirement is calculated, the flexibility available to developers, and the extent to which the rules account for differences in household income, dwelling size, and access to public transport.

Table 4: Parking requirement for a 30-unit development of 40,000 sq ft built-up area, mid-income segment





4.2 Cross-state analysis

1. The most important difference concerns the unit of measurement used to determine parking obligations. Kerala and Tamil Nadu use dwelling-unit size to differentiate parking requirements in residential developments. This creates the possibility of reducing parking obligations for smaller homes, although the extent of relief depends on the relevant size thresholds and exemptions. Andhra Pradesh, by contrast, applies a percentage of built-up area to residential apartment complexes, which does not directly distinguish between smaller and larger dwelling units within the same development.
2. Kerala: The rules combine dwelling-size-based parking requirements with specified exemptions for EWS/LIG Housing under approved schemes and provisions for mechanised parking. The effect of the 2025 amendment on smaller residential units requires particular attention.
3. Tamil Nadu's approach combines differentiated parking requirements by dwelling-unit size with a maximum parking cap for specified individual residential buildings. That's a shift from a system that relies on minimal parking restrictions only.
4. Andhra Pradesh: Residential apartment parking is primarily calculated as a percentage of built-up area, with specified structural concessions for stilt and cellar parking.
5. A further difference concerns the relationship between parking regulation and affordable housing. None of the three frameworks, based on the provisions examined in this chapter, appears to establish a comprehensive parking system that is consistently calibrated to household income, vehicle ownership, and access to public transport. Even where smaller dwelling units receive concessions, the concession is generally linked to the physical size or category of the unit rather than the income of the household occupying it.

5. Impact of Parking Mandates: Land Loss and Affordability Burden

This analysis examines the impact of mandatory parking requirements on the supply and affordability of Economically Weaker Section (EWS), Low-Income Group (LIG) and Middle-Income Group (MIG) housing under different state-level development regulations. A common development scenario is used to illustrate the effect of parking requirements across Kerala, Tamil Nadu and Andhra Pradesh.

The hypothetical development is based on a 4,000 sq. m development plot (effective development plot available after mandatory setbacks and other requirements), with state-specific Floor Space Index (FSI) values applied according to the regulatory framework considered for each state. The baseline construction cost is assumed to be ₹20,000 per sq. m, excluding land and parking costs. For car parking, an Equivalent Car Space (ECS) requirement of 28 sq.m per car space is used.

The analysis compares two dimensions of the parking mandate. The first is its effect on development costs and the resulting cost per dwelling unit. The second is its effect on housing supply, measured through the number of EWS, LIG and MIG units that could potentially be accommodated if land otherwise allocated to parking were instead used for housing.

Table 5: Common assumptions used in the three-state scenarios

Parameter	Assumption
Development plot	4,000 sq.m
Baseline construction cost	₹20,000/sq.m
Car parking space	28 sq.m/ECS (as per NBC)
EWS dwelling unit	30 sq.m
LIG dwelling unit	60 sq.m
MIG dwelling unit	75 sq.m
EWS annual household income used	₹3 lakh
LIG annual household income used	₹6 lakh
MIG annual household income used	₹9 lakh

5.1 Kerala: Comparative Analysis of EWS, LIG and MIG Housing

Under the Kerala scenario, an FSI of 3.0 produces a nominal built-up development capacity of 12,000 sq.m on the 4,000 sq.m plot. The analysis uses 11,040 sq.m as the net housing area after setting aside 8% for common areas. The same KMBR parking mandate is applied to three income groups (Economically Weaker Section (EWS), Lower Income Group (LIG) and Middle Income Group (MIG-I)) on an identical site, with identical FSI and construction-cost assumptions, to test which group bears the heaviest burden from parking.

The MIG-I unit is modelled at 75 sq.m as the KMBR car-parking ratio of one space per two dwelling units holds up to that size. All three groups therefore face exactly the same parking ratio, so any difference in outcomes comes only from unit size and household income.

5.1.1 Assumptions and Method

Table 6: Kerala — income groups, unit sizes and baseline capacity

Income group	Built-up area per unit (B)	Annual household income	Baseline units without parking
EWS	30 sq.m	₹3 lakh	368 units
LIG	60 sq.m	₹6 lakh	184 units
MIG-I	75 sq.m	₹9 lakh	147 units

Under KMBR parking assumptions, two dwelling units require one car-parking space. An additional 15% is added for visitor parking, and two-wheeler parking is taken as 25% of the car-parking area. Each equivalent car space (ECS) is taken as 28 sq.m. Base construction is costed at ₹20,000 per sq.m for housing units and common area, and parking construction at ₹10,000 per sq.m. For each group the number of buildable units can be calculated as:

$$N = A \div [B + (r \times (1 + v) \times S) + (r \times S \times t)]$$

Table 7: Kerala — parameters of the unit-yield calculation in Equation (1)

Symbol	Meaning	EWS	LIG	MIG-I
A	Total available area	11,040 sq.m	11,040 sq.m	11,040 sq.m
B	Built-up area per unit	30 sq.m	60 sq.m	75 sq.m
r	Car-parking ratio per unit	1 per 2 = 0.5	1 per 2 = 0.5	1 per 2 = 0.5
v	Visitor parking (fraction of car-parking units)	0.15	0.15	0.15
t	Two-wheeler parking (fraction of car-parking)	0.25	0.25	0.25
S	Area required for a car parking space	28 sq.m	28 sq.m	28 sq.m
$P = r(1+v+t)$	Parking spaces per unit	$0.5 \times 1.40 = 0.7$	$0.5 \times 1.40 = 0.7$	$0.5 \times 1.40 = 0.7$
$B + P \times S$	Effective area per unit incl. parking	49.6 sq.m	79.6 sq.m	94.6 sq.m
N	Number of buildable units	222 units	138 units	116 units

As per KMBR rule 29, the parking mandates attach a fixed 19.6 sq. m of parking to every dwelling unit of size upto 75 sq. m. For a 30 sq.m EWS unit, this adds 65% to the floor area each unit consumes; for a 60 sq.m LIG unit, it adds 33%, and for a 75 sq.m MIG-I unit, 26%. Buildable units are rounded down and parking spaces are rounded up to whole spaces.

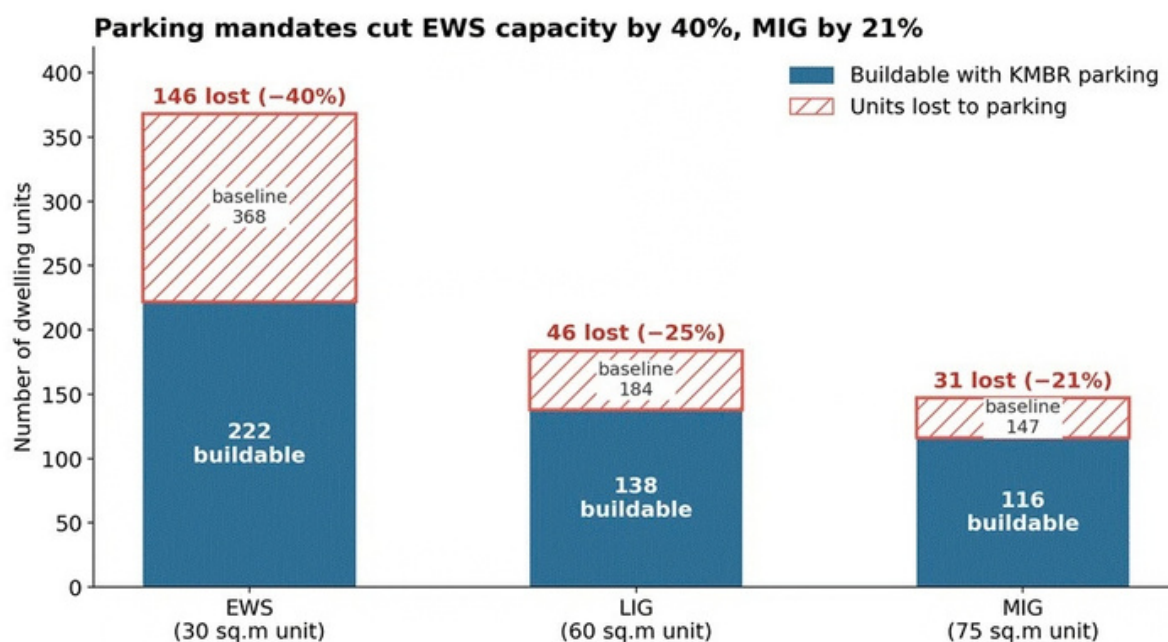
5.1.2 Results

Table 8: Kerala — results by income group

	Indicator	EWS	LIG	MIG-I
a	Baseline units	368 units	184 units	147 units
b	Number of buildable units	222 units	138 units	116 units
c	Units lost to parking (a – b)	146 units (40%)	46 units (25%)	31 units (21%)
d	Car parking required (b × 0.5)	111 ECS	69 ECS	58 ECS
e	Car-parking space (d × 28 sq.m)	3,108 sq.m	1,932 sq.m	1,624 sq.m
f	Visitor parking required (d × 0.15)	17 ECS	11 ECS	9 ECS
g	Visitor-parking space (f × 28 sq.m)	476 sq.m	308 sq.m	252 sq.m
h	Two-wheeler parking space (e × 0.25)	777 sq.m	483 sq.m	406 sq.m
i	Total parking space (e + g + h)	4,361 sq.m	2,723 sq.m	2,282 sq.m
j	Parking construction cost (i × ₹10,000/sq.m)	₹4,36,10,000	₹2,72,30,000	₹2,28,20,000
k	Parking cost per unit (j ÷ b)	₹1,96,441	₹1,97,319	₹1,96,724
l	Cost of housing + common area per unit	₹6,86,486	₹13,39,130	₹16,65,517
m	Total cost per unit with parking (k + l)	₹8,82,928	₹15,36,449	₹18,62,241
n	Parking share of unit cost (k ÷ m)	22.20%	12.80%	10.60%
o	Parking cost as share of annual income (k ÷ income)	65.50%	32.90%	19.70%
p	Share of built-up area consumed by parking (i ÷ 12,000)	36.30%	22.70%	19.00%
q	Parking area per sq.m of housing (i ÷ (b × B))	0.65 sq.m	0.33 sq.m	0.26 sq.m
r	Parking cost per sq.m of living space (k ÷ B)	₹6,548	₹3,289	₹2,623
s	Months of household income to pay for parking (o × 12)	7.9 months	3.9 months	2.6 months

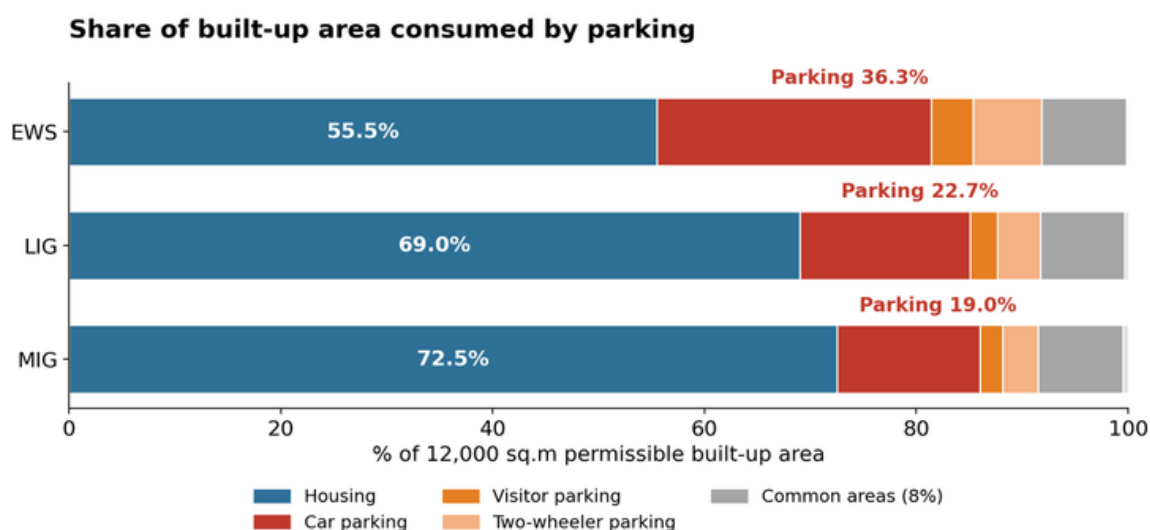
¹ Assuming a single car parking space of 28 sq. m, as per KMBR, the parking space mandated on a single dwelling unit of size up to 75 sq.m. will be 19.6 sq. m (0.7 * 28; refer to table 7), which includes 0.5 car parking per dwelling, 15% for visitor parking, and 28% for 2-wheeler parking.

Housing capacity



The loss of housing capacity falls hardest on the smallest units. EWS capacity drops from 368 to 222 units, a loss of 146 units or 40%. LIG capacity drops from 184 to 138 units (46 units, 25%), and MIG-I capacity from 147 to 116 units (31 units, 21%). In relative terms, EWS housing loses almost twice the share of capacity that MIG-I housing does, and in absolute terms it loses nearly five times as many homes.

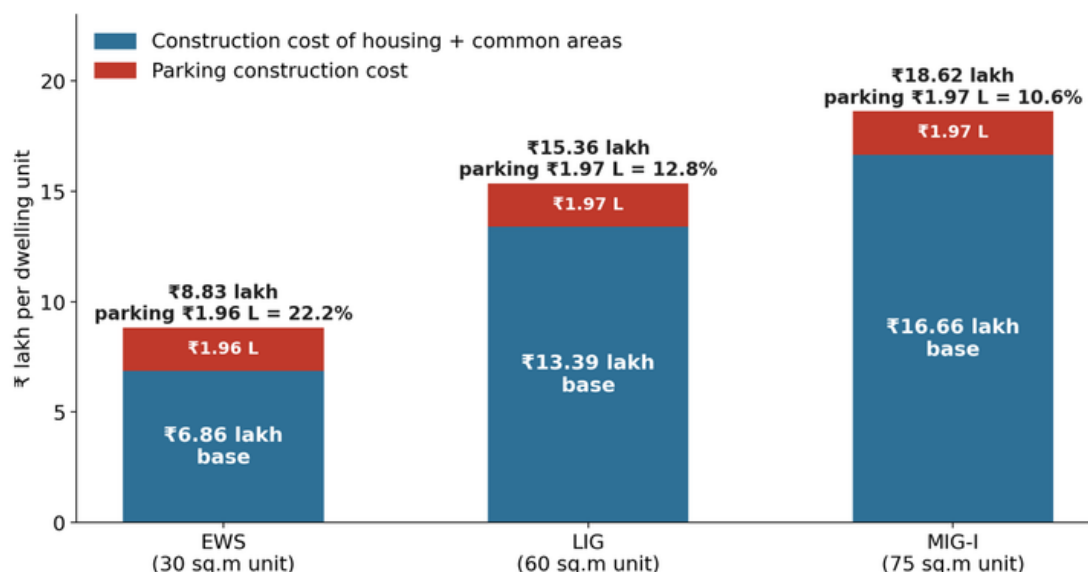
Use of built-up area



- Parking consumes 4,361 sq.m in the EWS scenario, 2,723 sq.m in the LIG scenario and 2,282 sq.m in the MIG-I scenario, which is 36.3%, 22.7% and 19.0% of the permissible built-up area respectively. Put another way, an EWS project must build 0.65 sq.m of parking for every sq.m of housing, against 0.33 sq.m for LIG and 0.26 sq.m for MIG-I. Because EWS units are small and numerous, the per-unit parking requirement multiplies across more units and takes a much larger bite out of the site.

Construction cost

Kerala: parking adds ~₹1.97 lakh to every unit, whatever its size

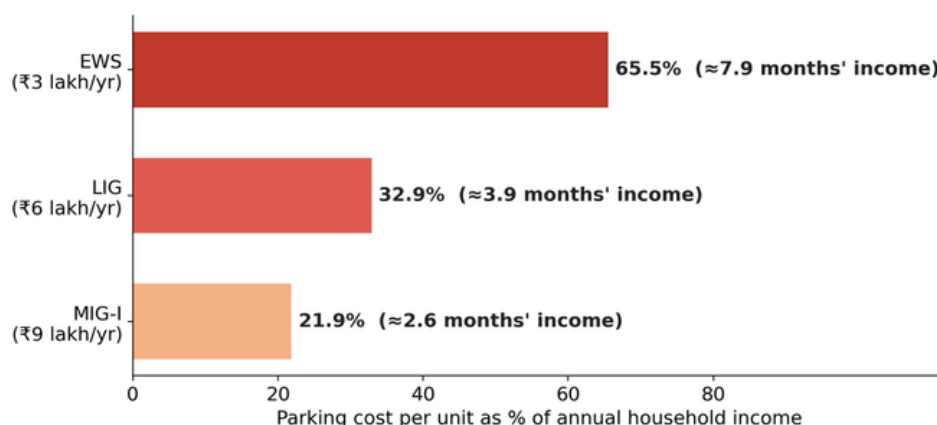


At ₹10,000 per sq.m, parking adds ₹4.36 crore to the EWS project, ₹2.72 crore to the LIG project and ₹2.28 crore to the MIG-I project. Spread across buildable units, however, the parking cost is almost identical for every group: ₹1.96 lakh per EWS unit, ₹1.97 lakh per LIG unit and ₹1.97 lakh per MIG-I unit. This is a direct consequence of the fixed ratio: every unit carries the same 0.7 parking spaces, so every unit carries the same parking cost.

A flat cost weighs very differently on units of different value. Parking makes up 22.2% of the total cost of an EWS unit (₹8.83 lakh), 12.8% of an LIG unit (₹15.36 lakh) and 10.6% of an MIG-I unit (₹18.62 lakh). Measured per sq.m of living space, EWS households pay ₹6,548 for parking, against ₹3,289 for LIG and ₹2,623 for MIG-I, which is 2.5 times the MIG-I rate.

Affordability burden

Kerala: the same parking bill weighs 3.0× more on EWS than MIG-I households



The affordability gap is widest when parking cost is set against household income. The parking component alone equals 65.5% of an EWS household's annual income of ₹3 lakh, or about 7.9 months of earnings. For an LIG household earning ₹6 lakh it is 32.9% (about 3.9 months), and for an MIG-I household earning ₹9 lakh it is 21.9% (about 2.6 months). The same mandate is therefore 3 times as heavy for an EWS household as for an MIG-I household.

Which group is most affected?

On every indicator, the EWS group is the most affected and the MIG-I group the least, with LIG in between:

Table 9: Kerala — summary of parking burden by income group

Indicator	EWS	LIG	MIG-I
Housing capacity lost	40%	25%	21%
Share of built-up area used for parking	36.30%	22.70%	19.00%
Parking share of unit cost	15.40%	10.20%	8.70%
Parking cost as share of annual income	65.50%	32.90%	21.90%
Parking cost per sq.m of living space	₹6,548	₹3,289	₹2,623

The reason lies in how the parking mandates are written in the building rules. KMBR sets parking per dwelling unit, and the ratio does not change up to 75 sq.m. Each unit, whether a 30 sq.m EWS flat or a 75 sq.m MIG-I flat, must carry the same 19.6 sq.m and roughly ₹1.97 lakh of parking. A fixed charge of this kind is regressive: it takes the largest share of floor area, construction cost and income from the smallest, cheapest homes and the lowest-income

households. In effect, the parking mandate works against the affordable housing it sits alongside, cutting EWS supply by 40% while MIG-I supply falls by about half as much.

These findings suggest that relaxing or removing parking requirements for EWS and LIG housing, or linking them to unit size rather than unit count, would free up the most housing capacity and bring the largest affordability gains for the groups that need them most.

5.2 Tamil Nadu: Comparative Analysis of EWS, LIG and MIG Housing

Under the Tamil Nadu scenario, the high-rise FSI of 3.25 under the TNCDBR produces a nominal built-up capacity of 13,000 sq.m on the 4,000 sq.m plot. After setting aside 8% for common areas, 11,960 sq.m remains as the net housing area. As in the Kerala analysis, the same site, cost and income assumptions are applied to EWS, LIG and MIG-I housing to test which group bears the heaviest burden from the parking mandate.

Unlike Kerala, Tamil Nadu grades its parking requirement by dwelling-unit size (Annexure IV, TNCDBR 2019). The three income groups therefore fall into two different bands. The 30 sq.m EWS unit falls in the 25–50 sq.m band, which requires only one two-wheeler space per unit and no car parking. The 60 sq.m LIG unit and the 75 sq.m MIG-I unit both fall in the 50–75 sq.m band, which requires one car space for every two units plus one two-wheeler space per unit. Visitor parking of 10% of the requirement, rounded to the nearest whole number, applies to developments of more than six units.

5.2.1 Assumptions and Method

Table 10: Tamil Nadu — income groups, parking bands and baseline capacity

Income group	Unit size (B)	TNCDBR band	Car spaces per unit (incl. visitor)	Two-wheeler spaces per unit	Baseline units (A ÷ B)
EWS	30 sq.m	25–50 sq.m	0	1.1	398 units
LIG	60 sq.m	50–75 sq.m	$0.5 \times 1.1 = 0.55$	1.1	199 units
MIG-I	75 sq.m	50–75 sq.m	$0.5 \times 1.1 = 0.55$	1.1	159 units

Each car space (ECS) is taken as 28 sq.m, as in the Kerala analysis, and each two-wheeler space as 3 sq.m including circulation. Base construction is costed at ₹20,000 per sq.m for housing units and common area, and parking construction at ₹10,000 per sq.m. Annual household incomes are ₹3 lakh (EWS), ₹6 lakh (LIG) and ₹9 lakh (MIG-I). Because Tamil Nadu requires two-wheeler parking by count rather than as a share of car-parking area, the Kerala formula is adapted as follows:

$$N = A \div [B + (r \times (1 + v) \times S) + (w \times (1 + v) \times s)]$$

Table 11: Tamil Nadu — parameters of the unit-yield calculation in Equation (2)

Symbol	Meaning	EWS	LIG	MIG-I
A	Net housing area	11,960 sq.m	11,960 sq.m	11,960 sq.m
B	Built-up area per unit	30 sq.m	60 sq.m	75 sq.m
r	Car-parking ratio per unit	0	0.5	0.5
w	Two-wheeler spaces per unit	1	1	1
v	Visitor parking (fraction of requirement)	0.1	0.1	0.1
S	Area per car space	28 sq.m	28 sq.m	28 sq.m
s	Area per two-wheeler space	3 sq.m	3 sq.m	3 sq.m
B + parking	Effective area per unit incl. parking	33.3 sq.m	78.7 sq.m	93.7 sq.m
N	Number of buildable units	359 units	151 units	127 units

The size bands change the picture seen in Kerala. Each EWS unit carries only 3.3 sq.m of two-wheeler parking, which adds 11% to the floor area it consumes. Each LIG and MIG-I unit carries 18.7 sq.m of car and two-wheeler parking, which adds 31% to a 60 sq.m LIG unit and 25% to a 75 sq.m MIG-I unit. Buildable units are rounded down and car spaces are rounded up to whole spaces.

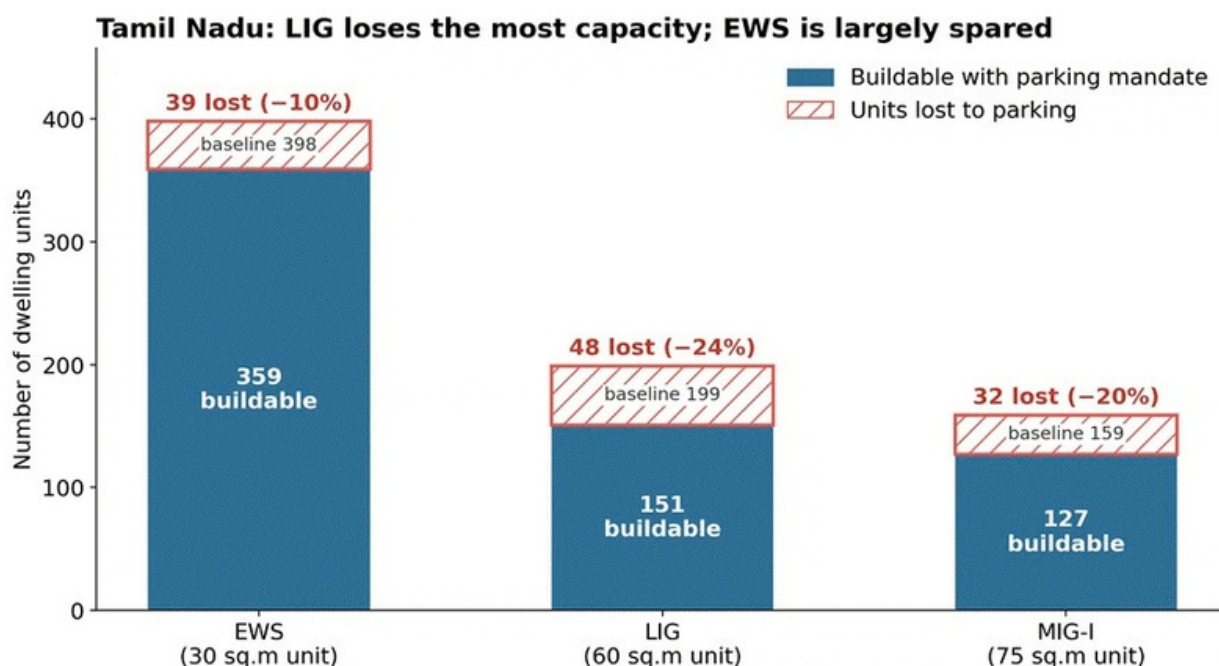
5.2.2 Results

5.2.2 Results

Table 12: Tamil Nadu — results by income group

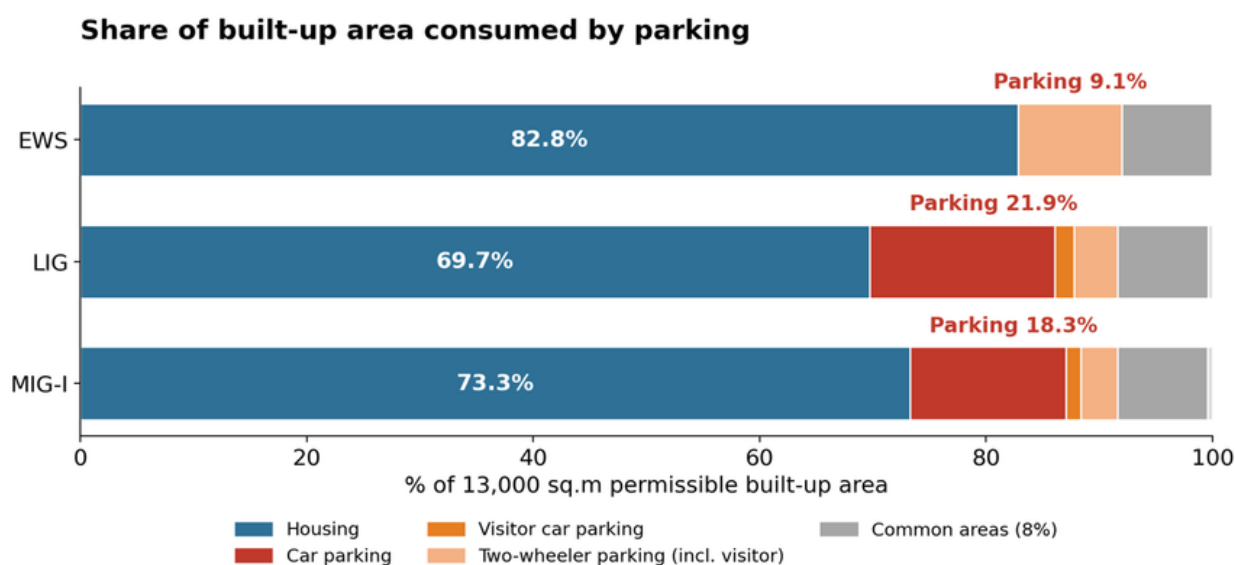
	Indicator	EWS	LIG	MIG-I
a	Baseline units	398 units	199 units	159 units
b	Number of buildable units	359 units	151 units	127 units
c	Units lost to parking (a – b)	39 units (10%)	48 units (24%)	32 units (20%)
d	Car parking required (b × r)	0 ECS	76 ECS	64 ECS
e	Visitor car parking (d × 0.10)	0 ECS	8 ECS	6 ECS
f	Car-parking space ((d + e) × 28 sq.m)	0 sq.m	2,352 sq.m	1,960 sq.m
g	Two-wheeler spaces incl. visitor (b × 1.1)	395 spaces	166 spaces	140 spaces
h	Two-wheeler parking space (g × 3 sq.m)	1,185 sq.m	498 sq.m	420 sq.m
i	Total parking space (f + h)	1,185 sq.m	2,850 sq.m	2,380 sq.m
j	Parking construction cost (i × ₹10,000/sq.m)	₹1,18,50,000	₹2,85,00,000	₹2,38,00,000
k	Parking cost per unit (j ÷ b)	₹33,008	₹1,88,742	₹1,87,402
l	Cost of housing + common area per unit ₹20,000 × (b × B + 1.040)	₹6,57,939	₹13,37,748	₹16,63,780
m	Total cost per unit with parking (k + l)	₹6,90,947	₹15,26,490	₹18,51,181
n	Parking share of unit cost (k ÷ m)	4.80%	12.40%	10.10%
o	Parking cost as share of annual income (k ÷ income)	11.00%	31.50%	18.70%
p	Share of built-up area consumed by parking (i ÷ 10,000)	9.10%	21.90%	18.30%
q	Parking area per sq.m of housing (i ÷ (b × B))	0.11 sq.m	0.31 sq.m	0.25 sq.m
r	Parking cost per sq.m of living space (k ÷ B)	₹1,100	₹3,146	₹2,499
s	Months of household income to pay for parking (o × 12)	1.3 months	3.8 months	2.5 months

Housing capacity



EWS housing is largely protected. Its capacity falls from 398 to 359 units, a loss of 39 units or 10%, because only two-wheeler parking is required. LIG capacity falls from 199 to 151 units (48 units, 24%), and MIG-I capacity from 159 to 127 units (32 units, 20%). The heaviest relative loss therefore falls on LIG housing, not EWS housing as in Kerala.

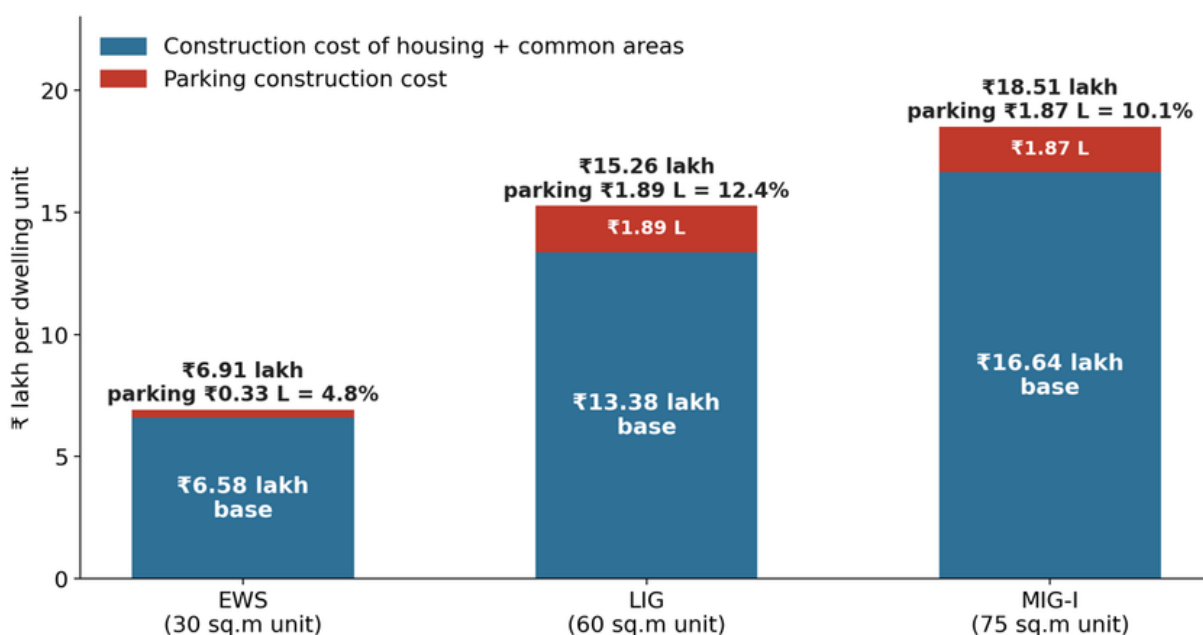
Use of built-up area



Parking consumes 1,185 sq.m in the EWS scenario, 2,850 sq.m in the LIG scenario and 2,380 sq.m in the MIG-I scenario, which is 9.1%, 21.9% and 18.3% of the permissible built-up area. An EWS project builds 0.11 sq.m of parking for every sq.m of housing, against 0.31 sq.m for LIG and 0.25 sq.m for MIG-I. Car parking accounts for most of the difference: the LIG and MIG-I scenarios need 84 and 70 car spaces, while the EWS scenario needs none.

Construction cost

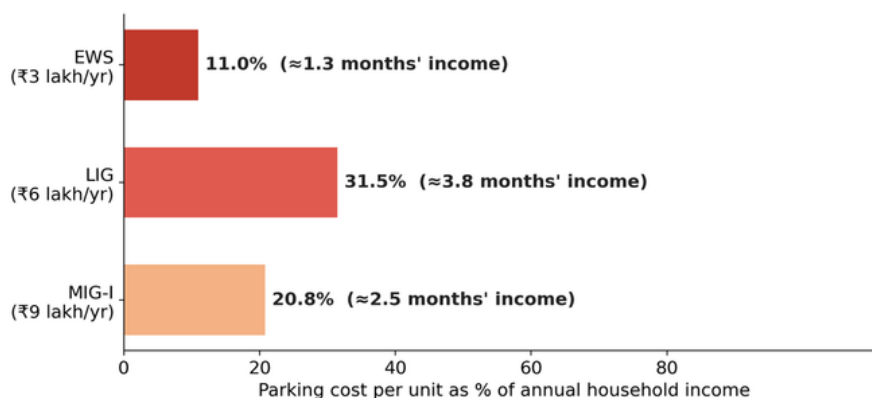
Tamil Nadu: parking adds ~₹1.89 lakh to LIG and MIG-I units, ₹0.33 lakh to EWS



Parking adds ₹1.19 crore to the EWS project, ₹2.85 crore to the LIG project and ₹2.38 crore to the MIG-I project. Per unit, this is ₹33,008 for EWS, against ₹1.89 lakh for LIG and ₹1.87 lakh for MIG-I. Since LIG and MIG-I units share the same parking ratio, they carry nearly the same parking cost, but on units of very different value: parking is 12.4% of the cost of an LIG unit and 10.1% of an MIG-I unit, compared with 4.8% for EWS. Per sq.m of living space, LIG households pay ₹3,146 for parking, MIG-I households ₹2,499 and EWS households ₹1,100.

Affordability burden

Tamil Nadu: the parking bill weighs most on LIG households



Set against household income, the parking component equals 11.0% of an EWS household's annual income (about 1.3 months), 31.5% for an LIG household (about 3.8 months) and 20.8% for an MIG-I household (about 2.5 months). The LIG burden is 1.7 times the MIG-I burden and 2.9 times the EWS burden.

Which group is most affected?

In Tamil Nadu, the LIG group is the most affected on every indicator, followed by MIG-I, with EWS the least affected:

Table 13: Tamil Nadu – Summary of parking burden by income group

Indicator	EWS	LIG	MIG-I
Housing capacity lost	10%	24%	20%
Share of built-up area used for parking	9.10%	21.90%	18.30%
Parking share of unit cost	4.80%	12.40%	10.10%
Parking cost as share of annual income	11.00%	31.50%	20.80%
Parking cost per sq.m of living space	₹1,100	₹3,146	₹2,499

The size bands give real relief to the smallest homes. By asking only for a two-wheeler space below 50 sq.m, the TNCDBR keeps the EWS capacity loss to about a tenth, against 40% in Kerala. The relief stops abruptly at 50 sq.m, however. A 60 sq.m LIG unit is placed in the same band as a 75 sq.m MIG-I unit and carries the same parking, even though it is smaller, cheaper and occupied by a lower-income household. This confirms, in numbers, the gap noted in Section 3.2.4: : the 50–75 sq.m band offers no lighter tier for LIG housing (41–60 sq.m under PMAY-U).

Two thresholds shape the outcome. The first is at 50 sq.m, where a unit moves from two-wheeler-only parking to half a car space. The second is at 75 sq.m: a unit just above it moves to one car space per 75 sq.m, so a 76 sq.m flat would need about 1.1 car spaces including visitors, twice the MIG-I requirement modelled here. Aligning the 50 sq.m threshold with the 60 sq.m upper limit for LIG units under PMAY-U would extend Tamil Nadu's EWS relief to LIG housing, where the burden is now highest.

5.3 Andhra Pradesh: Comparative Analysis of EWS, LIG and MIG Housing

Under the Andhra Pradesh scenario, an effective FSI of 3.5 (70% of a nominal 5.0) produces a built-up capacity of 14,000 sq.m on the 4,000 sq.m plot. After setting aside 8% for common areas, 12,880 sq.m remains for housing and parking. The same site, cost and income assumptions are again applied to EWS, LIG and MIG-I housing.

Andhra Pradesh follows a different logic from the other two states. Table 11 of the AP Building Rules, 2017 requires residential apartment complexes to set aside 20% of the total built-up area for parking, whatever the size of the flats, the number of units or the income of the occupants. Visitor parking is taken as 10% of this parking area, within the 20%. The parking area is therefore fixed at 2,800 sq.m (20% of 14,000 sq.m) in all three scenarios, of which 2,520 sq.m is resident parking and 280 sq.m is visitor parking.

5.3.1 Assumptions and Method

Table 14: Andhra Pradesh — income groups, unit sizes and baseline capacity

Income group	Built-up area per unit (B)	Annual household income	Baseline units without parking ($A \div B$)
EWS	30 sq.m	₹3 lakh	429 units
LIG	60 sq.m	₹6 lakh	214 units
MIG-I	75 sq.m	₹9 lakh	171 units

Because the rule fixes a parking area rather than a number of spaces per unit, the number of buildable units follows directly from the area left once parking is deducted:

$$N = (A - p \times T) \div B$$

Table 15: Andhra Pradesh — parameters of the unit-yield calculation in Equation (3)

Symbol	Meaning	EWS	LIG	MIG-I
T	Total permissible built-up area	14,000 sq.m	14,000 sq.m	14,000 sq.m
A	Net area after 8% common areas	12,880 sq.m	12,880 sq.m	12,880 sq.m
p	Parking share of built-up area (incl. visitor)	0.2	0.2	0.2
$p \times T$	Parking area	2,800 sq.m	2,800 sq.m	2,800 sq.m
B	Built-up area per unit	30 sq.m	60 sq.m	75 sq.m
N	Number of buildable units	336 units	168 units	134 units
$p \times T \div (S \times N)$	Implied car spaces per unit (at 28 sq.m per ECS)	0.298	0.595	0.746
$p \times T \div N$	Parking area per unit	8.33 sq.m	16.67 sq.m	20.90 sq.m

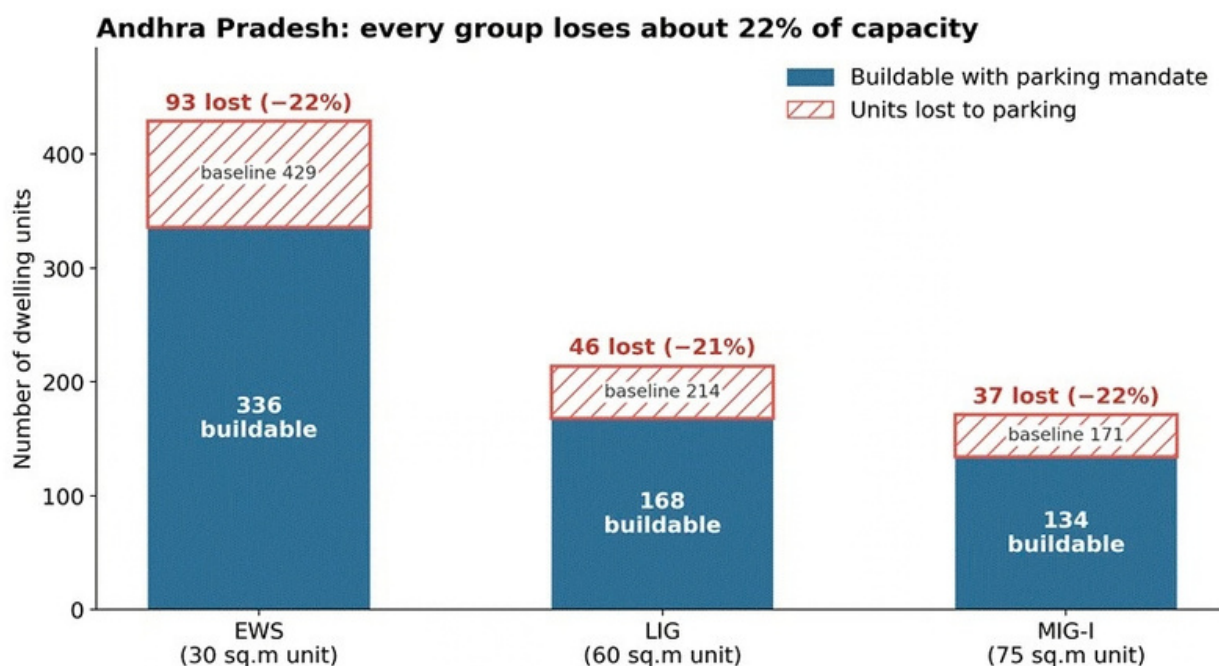
The rule does not state spaces per unit; they follow from the fixed parking area and the number of units it serves. At 28 sq.m per ECS, the 2,800 sq.m provides about 100 equivalent car spaces, or 0.298 per EWS unit, 0.595 per LIG unit and 0.746 per MIG-I unit. Parking per unit therefore rises in proportion to unit size: an LIG unit carries twice the parking of an EWS unit, and each carries about 0.28 sq.m of parking for every sq.m of housing.

5.3.2 Results

Table 16: Andhra Pradesh — results by income group

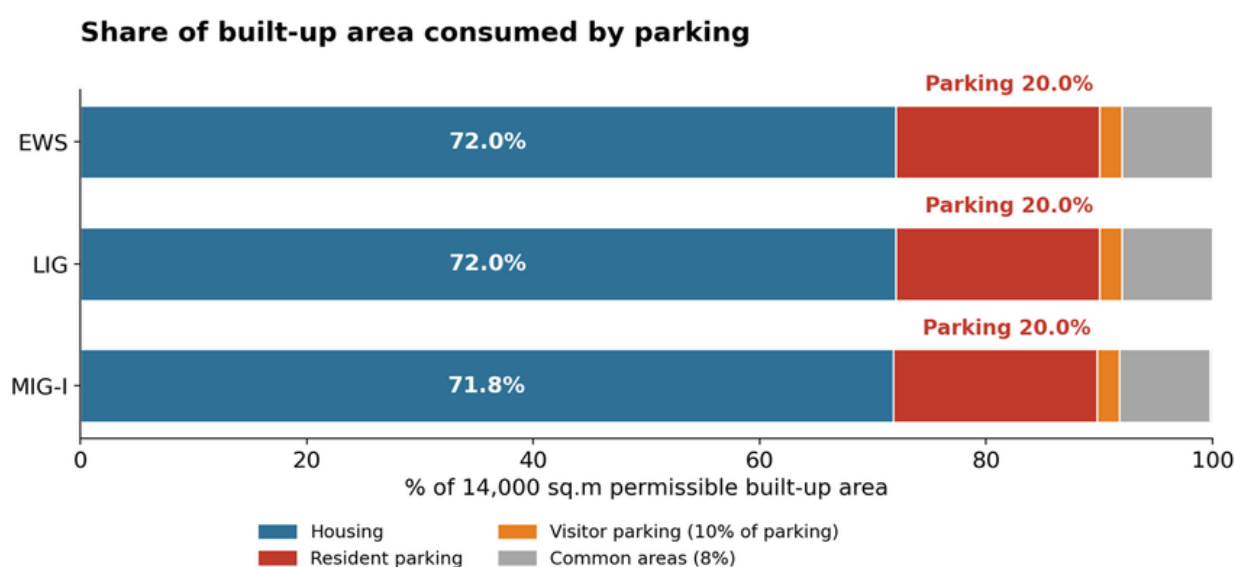
	Indicator	EWS	LIG	MIG-I
a	Baseline units	429 units	214 units	171 units
b	Number of buildable units	336 units	168 units	134 units
c	Units lost to parking (a – b)	93 units (22%)	46 units (21%)	37 units (22%)
d	Total parking space (20% × 14,000 sq.m)	2,800 sq.m	2,800 sq.m	2,800 sq.m
e	Resident parking area (90% of d)	2,520 sq.m	2,520 sq.m	2,520 sq.m
f	Visitor parking area (10% of d)	280 sq.m	280 sq.m	280 sq.m
g	Equivalent car spaces (d ÷ 28 sq.m)	100 ECS	100 ECS	100 ECS
h	Implied car spaces per unit (g ÷ b)	0.298	0.595	0.746
i	Parking construction cost (d × ₹10,000/sq.m)	₹2,80,00,000	₹2,80,00,000	₹2,80,00,000
j	Parking cost per unit (i ÷ b)	₹83,333	₹1,66,667	₹2,08,955
k	Cost of housing + common area per unit ₹20,000 × (b × B + 1,120 sq.m) ÷ b	₹6,66,667	₹13,33,333	₹16,67,164
l	Total cost per unit with parking (j + k)	₹7,50,000	₹15,00,000	₹18,76,119
m	Parking share of unit cost (j ÷ l)	11.10%	11.10%	11.10%
n	Parking cost as share of annual income (j ÷ income)	27.80%	27.80%	23.20%
o	Share of built-up area consumed by parking (d ÷ 14,000)	20.00%	20.00%	20.00%
p	Parking area per sq.m of housing (d ÷ (b × B))	0.28 sq.m	0.28 sq.m	0.28 sq.m
q	Parking cost per sq.m of living space (j ÷ B)	₹2,778	₹2,778	₹2,786
r	Months of household income to pay for parking (n × 12)	3.3 months	3.3 months	2.8 months

Housing capacity



Every group loses almost exactly the same share of capacity. EWS capacity falls from 429 to 336 units (93 units, 22%), LIG from 214 to 168 units (46 units, 21%) and MIG-I from 171 to 134 units (37 units, 22%). The small differences are due only to rounding. In absolute terms EWS housing loses the most homes, 93 against 37 for MIG-I, simply because EWS units are smaller and more numerous.

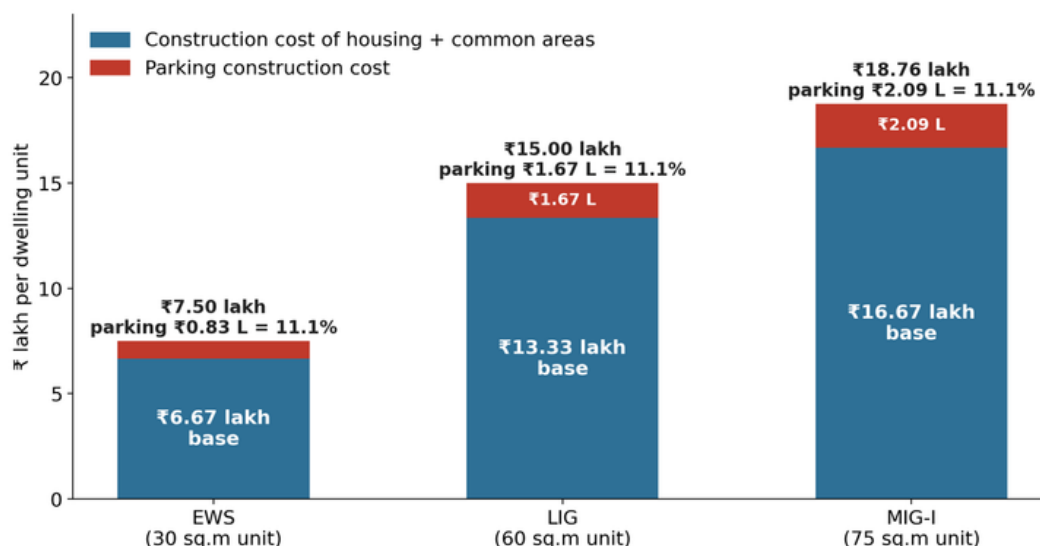
Use of built-up area



Parking takes a fixed 2,800 sq.m, or 20% of the built-up area, in all three scenarios, and housing takes about 72%. Unlike in Kerala and Tamil Nadu, where parking area varies with the number and size of units, the AP rule sets the parking footprint before the unit mix is known. A project cannot reduce its parking area by building smaller units, and it does not need more parking for larger ones.

Construction cost

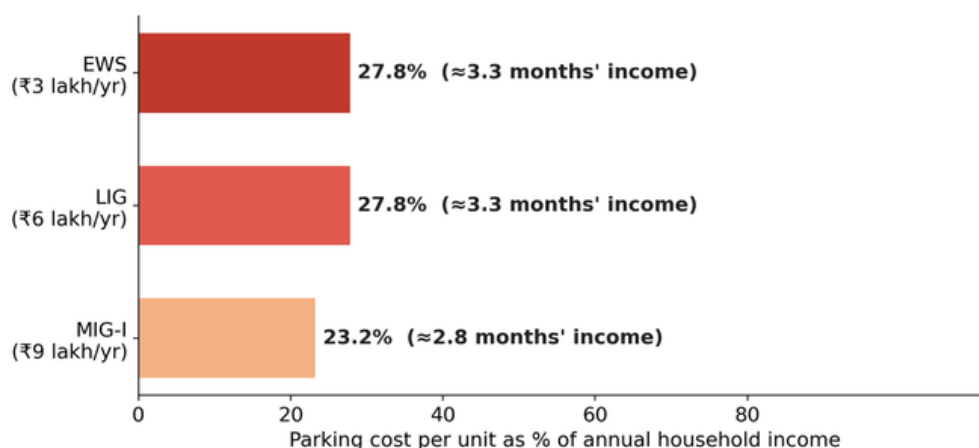
Andhra Pradesh: parking cost grows with unit size, about 11% of cost for all



Parking adds ₹2.80 crore to every project. Spread over the buildable units, this is ₹83,333 per EWS unit, ₹1.67 lakh per LIG unit and ₹2.09 lakh per MIG-I unit. Because both parking and base construction are fixed totals divided by the same number of units, parking is 11.1% of unit cost in every scenario, and ₹2,778 per sq.m of living space for each group. The AP rule is therefore neutral with respect to dwelling size: parking cost rises and falls in step with the size and value of the unit.

Affordability burden

Andhra Pradesh: EWS and LIG carry the same income burden



The parking component equals 27.8% of annual income for both EWS and LIG households (about 3.3 months) and 23.2% for MIG-I households (about 2.8 months). EWS and LIG burdens are identical because, in this model, both unit size and income double from EWS to LIG. The MIG-I burden is lower only because MIG-I income (₹9 lakh) rises faster than MIG-I unit size (75 sq. m).

Which group is most affected?

In Andhra Pradesh, EWS and LIG housing are affected equally, and MIG-I housing slightly less in relation to income:

Table 17: Andhra Pradesh — summary of parking burden by income group

Indicator	EWS	LIG	MIG-I
Housing capacity lost	22%	21%	22%
Share of built-up area used for parking	20.00%	20.00%	20.00%
Parking share of unit cost	11.10%	11.10%	11.10%
Parking cost as share of annual income	27.80%	27.80%	23.20%
Parking cost per sq.m of living space	₹2,778	₹2,778	₹2,786

A rule stated as a share of built-up area spreads the parking burden in proportion to floor space. It avoids the regressive per-unit charge seen in Kerala, but it also gives no relief to affordable housing: every project gives up about a fifth of its capacity to parking, whether it builds 30 sq.m EWS flats or 75 sq.m MIG-I flats. For an EWS household, the resulting parking cost still equals more than three months of income, with no test of whether the household owns a car.

Two provisions discussed in Section 3.3 could lower this burden in practice but are not modelled here. For exclusive affordable-housing projects and for apartment complexes on plots up to 750 sq. m, the requirement is deemed met if the whole stilt floor is used for parking. The 4,000 sq. m plot is well above the 750 sq. m threshold, so the first concession does not apply. The second could apply to an all-EWS or all-LIG project, where the stilt floor may provide less than 20% of the built-up area. The EWS and LIG results here should therefore be read as the burden on affordable units built in regular or mixed projects and as an upper bound for exclusive affordable-housing projects.

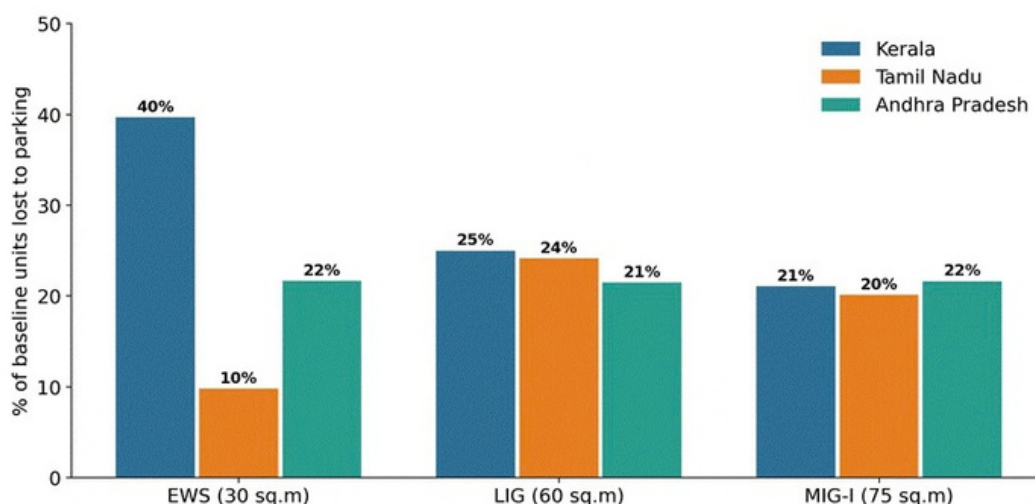
5.4 Cross-State Comparison: Who Bears the Parking Burden?

Bringing the three state scenarios together shows that the way a parking mandate is written, rather than its headline ratio, decides which income group carries the burden.

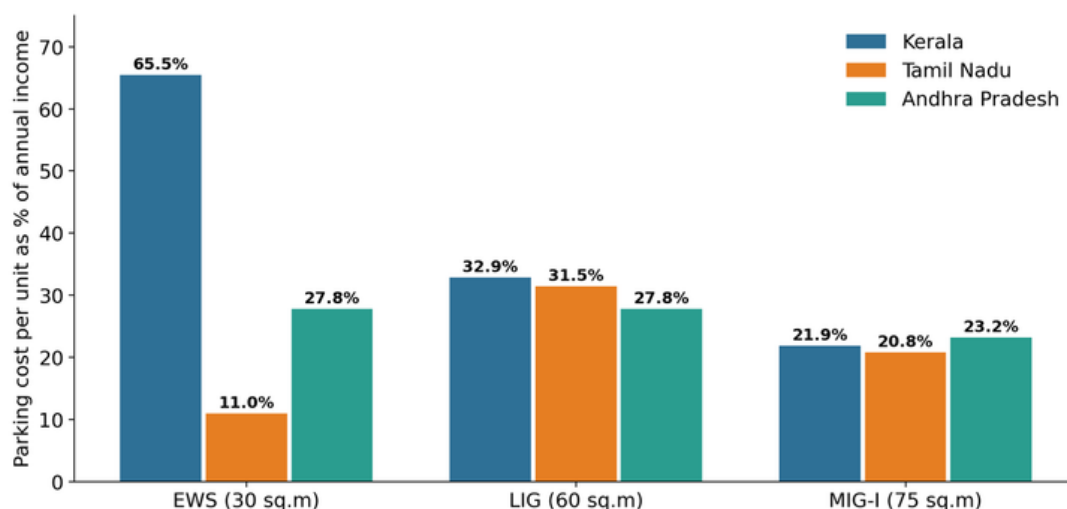
Table 18: Cross-state comparison of the parking burden by income group

State (basis of mandate)	Indicator	EWS	LIG	MIG-I	Most affected
Kerala (per dwelling unit)	Capacity lost	40%	25%	21%	EWS
	Parking as % of income	65.5%	32.9%	21.9%	
Tamil Nadu (by unit-size band)	Capacity lost	10%	24%	20%	LIG
	Parking as % of income	11.0%	31.5%	20.8%	
Andhra Pradesh (% of built-up area)	Capacity lost	22%	21%	22%	EWS and LIG equally
	Parking as % of income	27.8%	27.8%	23.2%	

Housing capacity lost to parking, by state and income group



Parking cost as a share of household income, by state and income group



Kerala's per-unit mandate is the most regressive. A fixed parking quantity attached to every unit up to 75 sq. m costs EWS households 65.5% of a year's income and removes 40% of EWS capacity, the highest figures in any state or group.

Tamil Nadu's size bands give the strongest protection to EWS housing, which loses only 10% of capacity and pays 11.0% of annual income for parking. The burden shifts to LIG housing, which falls into the same band as MIG-I housing and fares almost as badly as it does in Kerala (24% of capacity lost, 31.5% of income).

Andhra Pradesh's area-based rule is neutral with respect to unit size. Every group loses about 22% of capacity and pays 11.1% of the unit cost for parking. It avoids the steep EWS penalty of Kerala, but it also offers none of the EWS relief of Tamil Nadu.

For MIG-I housing, the three states converge: capacity losses range from 20% to 22% and the income burden from about 20.8% to 23.2%. The states differ most for EWS and LIG housing, which is where affordable-housing policy is aimed. Removing parking mandates for dwelling units up to 60 sq. m would cover both EWS and LIG housing under PMAY-U and remove the largest burdens identified in all three states.

6. International and Indian Case Studies

The parking regulations examined in Kerala, Tamil Nadu and Andhra Pradesh largely determine parking provision through fixed requirements linked to dwelling size, built-up area or building configuration. These approaches give limited consideration to the actual demand for parking, proximity to public transport or the availability of shared parking facilities. International and Indian experiences demonstrate alternative approaches that seek to connect parking provision more closely with travel behaviour, urban density and local infrastructure.

The main alternatives discussed in this section are parking maximums, transit-sensitive norms, proof-of-parking systems and demand-side management. These approaches do not represent a single regulatory model. Instead, they offer different ways of reducing excessive parking provision, improving effective and efficient use of urban land and aligning parking supply with actual demand.

6.1 Parking Maximums

Standard parking minimums require developers to provide a set amount of parking, even if the expected demand does not justify that level of provision. The opposite approach, which is maximum parking, sets a maximum number of parking spaces that can be provided in a development. The aim is to avoid an excessive allocation of land and floor space to vehicle parking, particularly in areas with good public transport access.

London provides an important example of this approach. In 2004, the city replaced minimum residential parking standards with maximum standards. A study comparing 216 residential developments before the reform with 11,428 developments after it found that parking provision declined by approximately 40%, equivalent to a reduction of around 0.76 spaces per dwelling (Guo 2013). The study attributed most of the reduction to the removal of minimum standards, while the introduction of maximum standards accounted for a smaller share of the change.

The London experience indicates that minimum parking requirements can influence the amount of parking supplied by developers. However, the extent of the effect is likely to vary according to development type, location, access to public transport and the availability of alternative parking arrangements. Removing minimums does not automatically result in the same reduction in parking provision across all projects.

Parking maximums are relevant to affordable housing because they can limit the amount of land and construction expenditure committed to parking. However, maximums need to be designed with regard to local transport conditions and the risk of spillover parking in surrounding streets. A ceiling on parking provision is therefore more effective when accompanied by on-street parking management, enforcement and viable public transport alternatives.

6.2 Transit-Sensitive Parking Norms

Transit Sensitive Parking Standards are parking standards that are modified based on the availability of public transit and the location of the development. This could mean lower parking requirements for projects within walking distance of metro stations, major bus routes or transit-oriented development (TOD) areas, as compared to projects in areas with limited public-transit access. The model recognises that demand for parking is not evenly spread across a city. Development close to reliable public transport and with less reliance on private vehicles may be more appropriate, while localities with less connectivity may require other arrangements. Transit-sensitive standards, then, try to align parking supply with the mobility choices available to residents.

Singapore is an example of a range-based approach. Its Land Transport Authority has since 2019 adopted Range-Based Parking Provision Standards that enable developments to provide parking within a prescribed lower and upper range. The range differs by location and land use. This approach allows for flexibility but retains a regulatory framework for parking provision.

Another example of linking parking regulation to public transit access is California's Assembly Bill 2097 (2022). The law prohibits public agencies from imposing or enforcing minimum automobile parking requirements on residential, commercial and other development projects located within one-half mile of a major transit stop. A local government may still impose minimums on a housing project, but only if it makes written findings, within 30 days of receiving a complete application, that the absence of parking would substantially harm its ability to meet housing needs for low-income, elderly or disabled households, or would substantially harm existing parking nearby. This override is not available for three kinds of project: those that dedicate at least 20 percent of units to lower-income households, students, the elderly or persons with disabilities; those with fewer than 20 units; and those already entitled to parking reductions under other laws. Affordable housing near transit is therefore fully protected from parking minimums. Developers remain free to provide parking voluntarily where they see demand for it.

Indian cities have or are planning to introduce the elements of transit-sensitive parking regulation:

- Mumbai: The Development Control and Promotion Regulations provide parking requirements linked to dwelling size, while designated TOD areas receive a reduced parking requirement. The reduction in qualifying TOD zones is intended to reflect the accessibility of public transport.

- Bengaluru: The draft Transit-Oriented Development Policy proposed an FSI of 4.0 for properties within 150 metres of a metro alignment. The Directorate of Urban Land Transport's Parking Policy 2.0 also proposes demand-sensitive parking management and reduced parking norms in TOD zones.
- Chennai: The city's parking policy discussions incorporate area-based parking management, including restrictions and pricing mechanisms intended to manage parking demand around transit infrastructure. The legal status, scope and implementation of these examples are different. Nevertheless, they show a trend away from uniform parking requirements towards standards that are sensitive to location and public transport accessibility.

6.3 Proof-of-Parking Systems

But a proof-of-parking system changes the requirement from requiring parking infrastructure in each residential development to requiring vehicle owners to have access to an off-street parking space. In such a system, people may have to prove they have access to a specified parking space before they can register a vehicle.

A good example is the Shako Shomeisho system in Japan. Vehicle owners must obtain a garage certificate from the local police before registering a vehicle. The certificate confirms that the owner has access to dedicated off-street parking within a specified distance of the registered address, either by ownership or lease. The system is based on restrictions on overnight onstreet parking in urban areas, encouraging the use of regulated off-street parking facilities. (Barter 2010)

The Japanese model addresses parking demand at the point of vehicle ownership rather than placing the entire responsibility on residential developers. It also supports the development of a commercial parking market. However, the model requires effective verification, enforcement and administrative capacity. The experience of other jurisdictions indicates that implementation challenges may include costly verification processes and the production of false certificates.

Chennai provides an Indian example of this approach as discussed in Box 1. The Parking Policy for the Chennai Metropolitan Area, prepared by the Chennai Unified Metropolitan Transport Authority (CUMTA) and approved by the Government of Tamil Nadu in January 2025, proposes proof of parking as a long-term requirement for vehicle registration. For households that already own vehicles but lack private off-street parking, the policy proposes a residential parking permit scheme in selected residential zones with sufficiently wide roads. Permits would be allocated through a regulated process, such as a lottery or auction, for monthly or annual periods. Together, these measures would shift part of the responsibility for parking from residential developers to vehicle owners, although both remain at the proposal stage.

Proof-of-parking systems can reduce the assumption that every residential project must independently accommodate the maximum anticipated level of vehicle ownership. However, their effectiveness depends on the availability of off-street parking, clear institutional responsibility, reliable registration databases and safeguards against exclusion of households that lack private parking.

6.4 Demand-Side Management

Demand-side parking management attempts to influence how, when, and where parking is used,

rather than relying on building more parking spaces. This could include paid parking, dynamic pricing, area-based parking plans, parking permits, restrictions on on-street parking and the development of shared or publicly managed parking facilities. This approach differs from parking minimums, which focus on the number of parking spaces that must be built. Demand side management, in contrast, views parking as a scarce urban resource that needs to be allocated by location, time and demand

Bengaluru's Parking Policy 2.0 has several demand management measures like paid parking, area-based parking plans, market-oriented parking supply and reduced parking norms in TOD areas. The policy also suggests that there could be different parking norms depending on the size of the dwelling and also the inclusion of additional parking in the FSI.

Similarly, parking policy proposals in Chennai include area level parking frameworks and demand based pricing for on-street parking. The proposals also cap on-street parking around metro stations and require parking revenues to be used to fund infrastructure for pedestrians and non-motorised transport. These measures aim to incorporate parking management into the wider goals of urban mobility.

Demand-side management is particularly relevant in situations where the removal of parking minimums could lead to additional pressure on public streets. Local authorities can regulate the price and availability of parking to manage demand and provide incentives for public transport, walking and other alternatives. But these systems need institutional capacity, effective enforcement, transparent pricing and the availability of viable mobility options.

7. Implications of the Current Legal Architecture

The parking minimums that impose a fixed quantity of off-street parking per dwelling or square meter of floor area serve as a mandatory condition for obtaining a completion certificate. Constructing this required parking consumes scarce land, capital and floor area that would otherwise be available for habitable space. The structural cost of parking is largely internalised into the unit price. Under the Supreme Court's ruling in *Nahalchand Laloochand* (2010) and Section 2(n)(iii) of RERA, open and stilt parking forms part of the common areas of a project and cannot be sold separately by the promoter. Only covered garages, enclosed on three sides with a roof as defined under RERA, may be sold as distinct units.

Consequently, the homebuyer pays for this infrastructure regardless of personal vehicle ownership. By bundle-pricing vehicle storage into the real estate asset, this framework effectively lowers the marginal cost of acquiring a car, inadvertently incentivising personal vehicle ownership. Higher car ownership induces traffic congestion and emissions and lowers the use of public transport. The lower usage of public transport systems undermines their financial viability and raises the case for further road widening and parking investments.

Construction Cost Inflation: According to the Victoria Transport Policy Institute, private vehicle ownership creates significant demand for parking infrastructure provided both publicly and privately. This has led to an over-supply of parking spaces, which are often under-utilised. The costs are primarily passed on to the society in the form of higher taxes, higher housing costs and higher consumer prices. One may be paying \$200-300 more a month in rent for a typical apartment, a little more for groceries and even restaurant prices can have surcharges for the parking lots. This is

inefficient as it drives up parking demands and vehicle traffic, while requiring households who drive less than average to subsidise parking costs for those who drive more. The policy is therefore regressive. Shifting to better parking policies away from minimums support housing affordability, public health, compact development and environmental protection (Litman 2025).

Studying commercial, industrial and retail properties in suburban Los Angeles County, Cutter and Franco (2012) found evidence that minimum parking requirements significantly increase the share of parcel area devoted to parking. In other words, developers provide more parking than they would choose to without the mandate. Shoup's analysis of construction cost surveys concluded that required off-street parking increases construction cost by approximately 37 percent above ground and 53 percent for below ground. (Shoup 2005, Mojica 2025)

A study by CEPT Ahmedabad found that rationalising mandatory building regulations, including parking, could reduce the unit cost of a small town house by about 33.6 percent. About 83 percent of this saving is due to reduced land cost made possible by denser, more efficient site planning (Patel, Byahut, and Bhatha 2018). In India, residential parking is systematically over-provided at the time of construction relative to the demand of households at the time of occupancy, leading to a cost burden with ripple effects in the urban housing market (Anirudh, Mazumder and Das, 2023).

Housing Price and Rent Inflation: Bundling parking into the price of housing raises costs for all residents, whether or not they own a car. Manville (2013) found that in downtown Los Angeles buildings converted to housing under the city's Adaptive Reuse Ordinance, bundled parking raised apartment rents by about \$200 per month and condominium prices by about \$43,000. Using data from the American Housing Survey, Gabbe and Pierce (2017) estimate that bundled garage parking adds about \$142 per month to renters' housing costs, roughly 17 percent of a unit's rent. Because the cost is hidden in the rent, it widens the affordability gap most for lower-income and car-free households. In India, the opportunity cost of land used for parking is also substantial. A study of Gurgaon estimated that land occupied by on-street parking near major commercial areas would yield about ₹36.9 lakh per month if rented at prevailing commercial rates, far more than the parking charges collected (Saxena and Shrivastava 2021).

Suppression of Housing Supply: In Buffalo, New York, the 2017 Green Code eliminated citywide minimum parking requirements. An evaluation of the reform found that 68 percent of new homes permitted after the reform would not have been permitted under the previous zoning code, indicating that parking requirements were one of the constraints that had prevented or limited some housing development under the earlier regime (Hess, 2021; Gould, 2023). Similarly, London eliminated parking minimums in 2004 (replacing them with maximum caps), resulting in a reduction of parking spaces in new residential buildings by 40 percent (Guo 2013).

Induced Car Ownership: Weinberger, Seaman, and Johnson (2009) compared New York City households in buildings with versus without guaranteed off-street residential parking and found that guaranteed parking was positively and significantly correlated with car commuting and total car ownership. They also estimated measurable increases in vehicle miles travelled and related CO₂ emissions in buildings with guaranteed parking versus those without. Manville (2017) found that households whose housing includes bundled parking are 50–75 percent less likely to be car-free than households without it. A review of residential parking research relevant to Indian cities concludes that residential parking is often over-provided relative to household demand and that

bundling parking with housing tends to encourage car ownership (Anirudh, Mazumder, and Das 2023). The Centre for Science and Environment (CSE) has characterised free and underpriced parking as a “hidden subsidy” to car owners and argued that parking incentives can induce greater motorisation and traffic (CSE 2012).

Reduced Residential Density and Urban Sprawl: A regulation requiring a fixed amount of floor space per dwelling for parking reduces habitable floor space available within a given FAR entitlement, producing lower residential density per acre than would prevail under free choice. Lower density produces urban sprawl. The Park4SUMP programme synthesis treats parking minimums as one of the principal regulatory drivers of European urban sprawl in the post-war period and positions parking maximums as a sprawl-management instrument.

8. Policy Recommendations

1. Remove minimum parking requirements and introduce maximums where appropriate:

Mandatory minimums distort housing markets: every homebuyer pays for a parking space and a share of visitor parking, whether or not they own a vehicle. Removing minimums allows developers to assess market demand for parking and supply it accordingly. This flexibility can reduce construction costs, use land more efficiently and lower housing prices by avoiding underused infrastructure. Evidence from London, Mexico City and Buffalo shows that removing minimums expands housing supply while cutting unnecessary parking. In London, most of the reduction in parking came from removing minimums rather than from the maximums introduced alongside (Guo and Ren 2013).

Parking maximums serve a different purpose. They restrict the amount of parking provided in a development to avoid surplus supply, which would weaken public transport. These work in dense transit-rich areas, such as metro corridors and TOD areas, and should be paired with on-street parking management to prevent spillover. Minimum parking standards are part of a feedback loop. Offering plentiful parking provision lowers the cost and inconvenience of car ownership. This in turn promotes car ownership and discourages walking, cycling and public transport. The rise of car ownership means more traffic and congestion, which in turn leads to demands for wider roads, wider access requirements and more parking. These, in turn, create more vehicle travel and entrench automobile dependence and high land and housing costs.

2. Separate parking prices from housing:

Parking should be sold as an add-on product, not included in the price of the apartment. With bundled pricing, the price of the dwelling includes the cost of parking, even if the resident does not own a car. Under current law, this unbundling is possible only for covered garages; open and stilt parking are treated as common areas that cannot be sold separately. Extending unbundled pricing to all forms of parking would require amendments to state building rules and to the treatment of parking under RERA.

Consequently, higher housing costs subsidise parking for households that do not own vehicles. This cross-subsidy hides the costs of parking and gives no incentive to households to reduce car ownership or to opt out of spaces they do not need. Empirical data support these findings. Gabbe and Pierce (2017) find that by decoupling the cost of parking from the cost of housing, the demand for parking spaces is reduced, and households are encouraged to own fewer cars. According to Litman (2025), separate parking pricing internalises the true cost of parking, encourages more efficient travel choices, and discourages unnecessary provision. This also

helps the developers estimate the number of parking spaces required and price them separately. Since open and stilt parking are common areas owned collectively by allottees, such transfers would need to operate through the residents' association, for instance, by allowing it to lease allotted spaces among residents. Alternatively, the legal treatment of parking under RERA would need to be revisited.

3. **Transferable parking rights:** Parking spaces in apartment buildings must be transferable between residents for rent/lease or sale. It helps to coordinate parking spaces spontaneously between the parking-value group and the public transportation group. Japan's parking supply and pricing are driven largely by private markets rather than blanket minimums, resulting in efficient use of land and avoiding oversupply. Singapore has also introduced market pricing for parking to ensure efficient allocation of parking resources and introduced flexible parking standards, especially in areas well served by public transport.
4. **Provide parking as optional along transit-oriented corridors:** Mumbai's Transit-Oriented Development (TOD) Policy and Development Control and Promotion Regulations (DCPR) 2034 provide a blueprint for relaxing parking requirements in high-transit-use areas. It acknowledges that households with good access to public transport need less private parking, reducing construction costs and making housing more affordable.
5. **Shared Parking Provisions:** Kerala continues to require residential developments to provide all mandatory parking within the project site, permitting off-site parking within 200 m only for non-residential occupancies. Andhra Pradesh allows common pool parking and shared basements between adjoining buildings but offers no clear route to off-site or shared public parking. Encouraging pooled parking spaces between adjacent developments could reduce the overall parking footprint while still having enough supply. This approach maximises land-use efficiency and allows sharing of parking among multiple properties based on time of use patterns.
6. **Remove uniform state-wide standards and allow local governments to decide:** Parking requirements should be based on local conditions such as transit availability, income, vehicle ownership patterns, and urban density. Municipal governments can consider local conditions while setting parking standards, which may result in more calibrated, demand-responsive regulations that take into account the heterogeneity of Indian cities.
7. **Remove parking mandates for EWS and LIG Housing:** Currently, Kerala provides relaxation in parking norms for individual housing under government schemes for dwelling units of size below 66 sq. m and not for group housing. However, Andhra Pradesh does not have any specific relaxation on parking. Tamil Nadu, on the other hand provides fewer or no parking norms for dwellings under 75 sq. m, without any classification, as those under government schemes. In order to improve the affordability of housing for the low-income segment, parking mandates under 60 sq. m must be removed. This enables more housing units to be built in the same plot area.

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Use of AI

The authors used Claude to assist with the generation of tables and graphs and QuillBot for grammar and language editing. The authors remain solely responsible for the content, interpretation, analysis, and conclusions presented in this report.



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