



Legislative Assembly for the
Australian Capital Territory

Standing Committee on Environment
and Planning

Submission Cover Sheet

Inquiry into DPA-04 – Missing Middle Housing Reform

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Submitter: Ian Diversi

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MMDR07 Block Geometry - A Zero Sum Game

DPA-04 – Missing Middle Housing Reforms (Cumulative Spatial Impact Analysis)

AUTHOR: Ian Diversi

EMAIL: [REDACTED]

DATE: 1 January 2026

1. Executive Summary

This submission constitutes a formal, evidence-based technical evaluation of the ACT Government's Draft Major Plan Amendment 04 (DPA-04), specifically focusing on the spatial and geometric feasibility of the proposed reforms within the RZ1 Suburban and RZ2 Suburban Core zones. While the high-level policy intent of DPA-04—to facilitate "Missing Middle" housing typologies such as dual occupancies, townhouses, and low-rise apartments—is strategically sound given the Territory's population projections, this forensic analysis identifies a critical divergence between the policy's density aspirations and the granular reality of its technical implementation.

The central finding of this report is that DPA-04, when applied in conjunction with the suite of mandatory "Subtractive Constraints" encompassing municipal infrastructure standards, waste management codes, and living infrastructure specifications, creates a spatial paradox. The cumulative load of these technical mandates frequently consumes such a significant proportion of the ground plane that the theoretical housing yields envisioned by the policy become geometrically impossible or financially unviable on standard suburban allotments.

Specifically, the "Cumulative Spatial Impact Analysis" demonstrates that:

1. **Vehicular Geometry Sterilization:** The interplay between Municipal Infrastructure Standard 07 (MIS 07) requirements for forward entry/exit on multi-unit sites and the expansive swept paths of the B85 design vehicle effectively sterilizes up to 40% of a standard block's frontage and central developable area.
2. **The Waste Management Cap:** The Development Control Code for Best Practice Waste Management imposes a de facto density cap. The geometric impossibility of accommodating a 12.5m Heavy Rigid Vehicle (HRV) for on-site collection on standard RZ1 blocks effectively prohibits yields greater than two dwellings, despite zoning permissions for higher density, thereby negating the "Missing Middle" potential of tri-occupancies or terrace housing.
3. **The Canopy-Solar Conflict:** The increase in mandatory canopy cover to 20% (via Deep Soil Zones) directly competes with the building footprint required to achieve density. Furthermore, the newly introduced 45-degree solar envelope, while an improvement on the 31-degree rule, still interacts with the "Solar Fence" requirements to create a "crush zone" that renders the upper floors of rear dwellings structurally complex and prohibitively expensive.

Consequently, without targeted technical amendments to relax specific constraint layers—most notably the forward-exit mandate for small-scale infill and the rigidity of waste collection protocols—DPA-04 risks failing to deliver the anticipated housing supply. Instead of affordable "gentle density," the policy framework is likely to produce a limited supply of high-cost, compromised dwellings, or result in low uptake due to technical unbuildability.

This report provides a detailed dissection of these spatial conflicts, supported by analysis of the Residential Zones Technical Specifications 2025 (ZS1), consultation submissions, and relevant engineering standards.

2. Introduction: The Spatial Economics of the Missing Middle

The ACT Government's Draft Missing Middle Housing Reform Supporting Report (DPA-04) frames the amendment as a necessary evolution of the Territory Plan to accommodate a population projected to reach 700,000 by 2050.¹ The policy relies heavily on the intensification of the RZ1 Suburban Zone, which constitutes 67.6% of all urban land in the Territory, and the RZ2 Suburban Core Zone, representing 9.5%.¹ The mechanism for this intensification is the relaxation of lease variation strictures to allow unit titling of dual occupancies on blocks over 800m² in RZ1 and the encouragement of townhouse typologies in RZ2.¹

However, planning policy cannot be evaluated in isolation. It operates within a physical reality defined by the geometry of the lot, the hydraulic requirements of sewer easements, and the turning circles of modern vehicles. The Missing Middle Housing Design Guide (MMHDG) advocates for "gentle density" and high-quality design outcomes.³ Yet, the realization of these designs is contingent upon the technical feasibility of fitting multiple dwellings, parking spaces, deep root zones, and waste enclosures onto a single, finite parcel of land.

The "Missing Middle" is not merely a demographic concept; it is a spatial puzzle. Unlike greenfield development, where land parcels are carved to fit the housing product, infill development requires the housing product to be contorted to fit existing, constrained land parcels. This submission shifts the focus from the policy intent to the technical execution. It treats the site not as a blank canvas, but as a "residual capability" problem. Every mandatory regulation subtracts area from the block.

The critical question for the Committee is: After all mandatory subtractions for cars, waste, trees, and solar access are made, is the remaining land sufficient to build a home that is livable, affordable, and compliant?

This report investigates this question through a rigorous "Cumulative Spatial Impact Analysis," stress-testing the DPA-04 provisions against the immutable laws of geometry and engineering.

3. Methodology: Cumulative Spatial Impact Analysis

The methodology employed in this report is the "Cumulative Spatial Impact Analysis" (CSIA). This forensic approach eschews the standard "policy capability" assessment—which asks

what is permitted—in favor of a "technical capability" assessment—which asks what is physically possible.

The CSIA treats the regulations as a series of "Subtractive Constraints." We begin with a representative RZ1 block (e.g., 800m² with a 18m frontage) and sequentially overlay the mandatory spatial requirements of the new planning framework.

The Hierarchy of Subtraction:

1. Hard Infrastructure: The non-negotiable geometry of vehicular access, parking, and maneuvering (MIS 07, AS 2890.1).
2. Service Infrastructure: The spatial demands of waste management (bins, enclosures, collection paths) and utility easements.
3. Soft Infrastructure: The "Living Infrastructure" mandates for deep soil zones, canopy cover, and permeable planting areas.
4. The Building Envelope: The remaining three-dimensional volume defined by setbacks, solar angles, and building separation codes.

The "Synthesis" of these layers reveals the actual buildable envelope. If this residual envelope is too small, irregular, or fragmented to support a functional dwelling, the policy is deemed technically failing.

4. The Cumulative Spatial Impact Analysis: Detailed Findings

4.1 Hard Infrastructure Subtraction: The Tyranny of the Turning Circle

The most significant consumer of ground plane efficiency in medium-density infill is the private vehicle. While DPA-04 adjusts parking ratios, it does not alter the fundamental geometry of vehicular movement, which is governed by Municipal Infrastructure Standards and Australian Standards. These requirements introduce a massive "Hard Infrastructure Subtraction" that is often underestimated in high-level policy discussions.

4.1.1 Driveway Widths and Splaying (MIS 07)

Under Municipal Infrastructure Standard 07 Driveways (MIS 07), the design of access points is strictly regulated to ensure safety and serviceability. For a dual occupancy or multi-unit development—the primary vehicle for Missing Middle housing—the standard driveway width is significantly greater than for a single dwelling.

According to MIS 07 Table 7-3 5, the dimensional requirements are as follows:

Driveway Application	Standard Width (Property Boundary)	Standard Width (Kerb)	Maximum Width (Kerb)
Single Dwelling (Single Garage)	3.0 m	4.7 m	5.5 m
Single Dwelling (Double Garage)	4.7 m	4.7 m	5.5 m

Driveway Application	Standard Width (Property Boundary)	Standard Width (Kerb)	Maximum Width (Kerb)
Two or Three Dwelling Units	Assessed by Designer (Max 5.5m)	Assessed by Designer (Max 5.5m)	5.5 m

Analysis of Impact:

For a "Missing Middle" development (2-3 dwellings), the driveway width is not merely a function of the car width but of the maneuvering requirement. Because vehicles entering a multi-unit site must often pass each other or navigate tighter internal radii, the driveway width at the boundary typically defaults to the wider end of the spectrum (5.0m - 5.5m) to satisfy AS 2890.1 circulation requirements.

Furthermore, MIS 07 mandates strict clearances from infrastructure. Driveways must be located clear of street trees (outside the drip line), stormwater sumps, and light poles.⁵

- The Splay Effect: The transition from the kerb width to the boundary width creates a "splay." On a standard RZ1 block with a frontage of 16 to 18 meters, a 5.5-meter driveway crossover, combined with the required 1.0m to 1.5m clearance from side boundaries and another 1.0m clearance from a street tree, can consume 35-45% of the effective frontage.
- The Gun-Barrel Effect: This consumption of frontage severely limits the ability to present "street-facing" dwellings, a key design principle of the MMHDG intended to activate the streetscape.⁷ Instead, the driveway dominates the frontage, forcing the second dwelling to the rear. This creates a "gun-barrel" site layout where a long strip of hardstand runs the length of the block, sterilizing a 5.5m wide strip of land for the entire depth of the site.

4.1.2 The "Forward Exit" Mandate: The Silent Density Killer

A critical, often overlooked constraint is the requirement for vehicles to enter and exit the site in a forward direction. Municipal Infrastructure Standard 07 explicitly states that for "Two or three dwelling units," provision must be made to "turn around inside the property so that exit is in a forward direction".⁶ The document notes that reversing onto the road is "no longer allowed for new developments" of this scale.⁶

This requirement is catastrophic for spatial efficiency on standard suburban blocks. To achieve forward exit for a B85 design vehicle (the standard passenger car defined in AS 2890.1), a site must accommodate a turning circle or a three-point turn bay.

Geometric Reality of the B85 Vehicle:

- Turning Radius: The B85 vehicle has a minimum turning radius of 11.5 meters.⁸
- Swept Path: The "swept path" (the envelope the vehicle body travels through) is wider than the wheel tracks.
- Maneuvering Area: A functional three-point turn requires a paved apron significantly larger than a standard parking space. A typical T-head turning bay requires a width of at

least 5.5 meters and a length sufficient to allow the vehicle to execute the maneuver without crossing the property boundary or hitting a fence.¹⁰

Scenario Testing (800m² Block):

On a standard 800m² block (20m x 40m), aiming for a dual occupancy:

1. A driveway runs down the side (approx. 30m length x 3.5m width = 105m²).
2. To turn around, a T-head or turning bay is required at the rear or between dwellings. This requires an additional apron of approx. 35-50m².
3. Total Hard Infrastructure Area (Driveway + Turn + Parking): ~200m² - 250m².

This maneuvering geometry effectively sterilizes the central portion of the site. It forces the dwellings to be pushed to the extreme periphery (front and rear), creating long driveways that act as "heat sinks," exacerbating the urban heat island effect—directly contradicting the goals of the Living Infrastructure Plan.¹¹ The spatial consumption of this hard infrastructure often exceeds the footprint of the dwellings themselves.

4.1.3 Parking Ratios and Dimensional Rigidity

DPA-04 proposes adjustments to parking rates to encourage density. For RZ1 and RZ2, the proposed rate is one car space per dwelling, plus additional spaces for dwellings with 2+ bedrooms (one extra space for every five 2-bedroom dwellings, etc.).¹

While the numerical reduction is welcomed by industry, the physical dimensions of the spaces remain governed by AS 2890.1 and the Parking and Vehicular Access General Code.

- Standard Space: 2.4m x 5.4m.¹²
- Obstructed Space: If this space is adjacent to a wall or obstruction (common in compact infill), it must be widened to 2.7m or 3.0m.¹⁰
- Visitor Parking: Visitor parking must be accessible and often requires wider dimensions (3.2m x 7.8m for parallel accessible spaces).¹²
- Location: DPA-04 mandates that at least one space per dwelling be roofed (though some snippets suggest this might be relaxed, the general code often requires it).¹

For a dual occupancy project, providing two resident spaces plus a potential visitor space (depending on bedroom count) requires approximately 40-50m² of dedicated parking area, excluding the driveway and turning bay. When combined with the MIS 07 forward exit requirement, "Hard Infrastructure" can easily consume 35-45% of the total site area of an 800m² block. This leaves a critically diminished area for the actual housing and the mandated green zones.

4.2 The Waste Management Nexus: A Hidden Density Cap

The Development Control Code for Best Practice Waste Management (2019) introduces a second layer of hard constraints that acts as a de facto density cap, particularly for the "Missing Middle" typologies of townhouses and tri-occupancies.

4.2.1 Kerbside vs. On-Site Collection Triggers

The Code creates a bifurcation in waste servicing based on the number of dwellings:

- Kerbside Collection: Generally permitted for single dwellings and dual occupancies.
- The "Three Dwelling" Cliff: For developments of 3 or more dwellings (multi-unit), kerbside collection is often restricted or denied if there is insufficient kerb frontage to accommodate the required bins.¹⁴
- Kerb Space Requirement: Each dwelling requires space for a waste bin, a recycling bin, and potentially a green waste bin. For 3 dwellings, this equates to 6-9 bins. The Code requires separation between bins. If the kerb frontage is obstructed by the 5.5m driveway, street trees, and light poles, there is often physically insufficient space to present bins for 3 dwellings.
- Result: The development is forced into "On-Site Collection."

4.2.2 The Heavy Rigid Vehicle (HRV) Killer

Once a development is triggered into On-Site Collection, the spatial requirements escalate dramatically. The Code requires that the site accommodate a Heavy Rigid Vehicle (HRV) waste truck.¹⁴

- Vehicle Dimensions: An HRV is 12.5 meters long.
- Maneuvering: The truck must enter the site, collect the waste, and exit in a forward direction.¹⁴
- Swept Path: The swept path of a 12.5m truck performing a turn is immense. It requires a turning circle radius of approximately 12.5m (Wall to Wall) or a massive T-head turning bay.

Impact on RZ1/RZ2 Yield:

It is geometrically impossible to accommodate a 12.5m HRV turning movement on a standard unconsolidated RZ1 or RZ2 block (e.g., 800-1000m²) while retaining any meaningful buildable area. The driveway width would need to increase to accommodate the truck's sweep, and the turning bay would consume the entire rear yard.

Conclusion: This effectively acts as a hard density cap of 2 dwellings (Dual Occupancy) for most standard blocks. Even if the RZ1 zoning allows for a tri-occupancy or a small townhouse row, the Waste Code's HRV requirement physically prohibits it unless blocks are consolidated to create a site large enough (1500m²+) to handle the truck. This directly undermines the "Missing Middle" objective of increasing diversity beyond simple duplexes.

4.2.3 Enclosure Dimensions

Even for developments that avoid on-site collection, the waste enclosure requirements are significant.

- Dimensions: Waste enclosures must accommodate 1100L hoppers or banks of 240L bins. The enclosure must have a minimum height of 2.1m to 2.4m.¹⁴

- Location: Enclosures must be located within 75 meters of the dwelling door.¹⁴ They cannot be located in the front setback, and they must be accessible via a path with a gradient no steeper than 1:10.¹⁶
- Visual Impact: These structures are large (often 3m x 2m) and visually intrusive, further consuming the "soft" landscape area.

4.3 Soft Infrastructure Subtraction: The Green Constraint

The ACT Government's commitment to 30% canopy cover and climate resilience has resulted in the introduction of stringent "Living Infrastructure" requirements. These operate as "Soft Infrastructure Subtractions" that compete directly with the Hard Infrastructure for the remaining ground plane.

4.3.1 Deep Soil Zones and Canopy Cover (20%)

The Residential Zones Technical Specifications (2025) mandate a minimum tree canopy cover of 20% for multi-unit housing in RZ1 and RZ2 (increased from 15%).¹ This canopy is not theoretical; it must be achieved via trees planted in "Deep Soil Zones."

Defining the Constraint:

- Deep Soil Zone (DSZ): An area of soil unimpeded by buildings or structures above and below ground. It explicitly excludes basements, services, and driveways.¹⁸
- Dimensions: To count towards the target, the DSZ must meet minimum dimensions:
- Medium Tree (6-12m height): Minimum dimension of 5 meters and a soil volume of 42m³.¹⁸
- Large Tree (>12m height): Minimum dimension of 7 meters and a soil volume of 85m³.¹⁹

The Spatial Conflict:

On an 800m² block, a 20% canopy cover target requires 160m² of effective canopy. If planting two medium trees (approx. 50-60m² canopy each) and smaller vegetation, the developer must set aside significant "no-build" zones.

- Crucial Insight: These zones cannot overlap with the driveway turning bay (Hard Infrastructure) or the dwelling footprint. The "Deep Soil Zone" effectively creates a secondary setback.
- Scenario: If a block is 20 meters wide, and a 5.5m driveway runs down one side, and a 5m wide deep soil zone is required for a medium tree, over 50% of the block width is sterilized from building before setbacks and solar envelopes are even applied. This leaves a narrow "buildable strip" (approx. 9m) that forces narrow, multi-story townhouse designs which are expensive to build and often functionally compromised.

4.3.2 Planting Area Requirements (30%)

DPA-04 mandates a minimum planting area of 30% for multi-unit developments in RZ1 and RZ2.¹ This is distinct from canopy cover; it refers to permeable surfaces.

While this 30% target is a reduction from previous 40% requirements in some contexts, it remains a hard constraint. When added to the ~40% hardscape coverage required for

driveways, turning bays, and paths, the remaining allowance for the building footprint (Site Coverage) is mathematically squeezed to approximately 30%.

Calculation:

- Total Site Area: 100%
- Hard Infrastructure (Driveways, Parking, Paths): ~40%
- Soft Infrastructure (Planting Area): 30%
- Maximum Residual Building Footprint: ~30%

On an 800m² block, a 30% footprint is 240m². For a dual occupancy, this allows 120m² ground floor per dwelling. While feasible for two-story dwellings, this leaves zero margin for error and necessitates highly efficient, often box-like designs that may conflict with neighborhood character objectives.

4.4 Solar and Setback Subtraction: The Invisible Cage

The third layer of subtraction is the three-dimensional geometric envelope defined by setbacks and solar access rules.

4.4.1 The 45-Degree Solar Envelope

DPA-04 proposes increasing the solar building envelope angle for multi-unit housing from 31 degrees to 45 degrees.¹⁷

Analysis of Impact:

- The Improvement: An increase from 31° to 45° technically expands the buildable volume, allowing taller buildings closer to the boundary. This is a positive change for density.
- The Constraint: However, it remains a significant constraint on the southern boundaries of blocks. The "solar fence" concept defines a virtual wall on the northern boundary of the adjoining block. DPA-04 sets the solar fence height at 3m (primary building zone) and 2.3m (rear zone) for multi-unit housing.¹⁷
- Calculation: At a 3m setback from the rear boundary, the max height is: $2.3\text{m} + (3\text{m} * \tan(45^\circ)) = 5.3\text{m}$.
- This height (5.3m) is barely sufficient for a two-story wall (typically 6m+). This forces the upper floor of any "Missing Middle" townhouse to be stepped back significantly, increasing construction complexity (intricate roof lines, waterproofing) and cost, while reducing internal floor area efficiency.

4.4.2 Setback Standardization

DPA-04 proposes standardized setbacks to streamline assessment:

- Front Setback: 4m or 6m depending on street hierarchy.²¹
- Side Setback: Reduced to 0m for lower floor levels on one boundary (zero-lot line), but upper levels require setbacks (typically 3m).¹⁷
- Rear Setback: Increased rear setbacks are proposed for multi-unit housing to protect the "green network" and deep soil zones.²⁰

Synthesis of Geometry:

The interaction of the increased rear setback (to accommodate the 20% canopy/deep soil) and the mandatory front setback creates a "crush zone" in the middle of the block. This is exactly where the second dwelling in a dual occupancy is usually located. By squeezing the building envelope from both ends (front and rear) and complicating the vertical envelope with solar planes, the policy forces a specific, narrow, two-story typology that is expensive to construct and difficult to inhabit for people with mobility issues (aging in place).

5. Synthesis: The Unbuildable Block?

When all "Subtractive Constraints" are superimposed, the residual capability of a standard RZ1 block is revealed to be critically compromised.

The "Residual Capability" Calculation (Standard 800m² Block):

Component	Requirement Source	Approx. Area (m ²)	% of Site
Total Site Area		800 m ²	100%
Hard Infrastructure	MIS 07 (Driveway + Turning Bay + Parking)	280 m ²	35%
Soft Infrastructure	ZS1 (Planting Area + Deep Soil)	240 m ²	30%
Waste Infrastructure	Waste Code (Enclosures + Paths)	15 m ²	~2%
Setback Sterilization	ZS1 (Unbuildable setbacks not covering above)	50 m ²	~6%
TOTAL SUBTRACTIONS		585 m ²	73%
RESIDUAL BUILDABLE FOOTPRINT		215 m ²	27%

Conclusion: The analysis suggests that on a standard 800m² block, the maximum ground floor footprint available for housing is approximately 215m².

For a dual occupancy, this allows for two dwellings with a ground floor of 107.5m² each.

While this allows for compact 2-story townhouses, it leaves zero flexibility. It requires a perfect rectangular site, flat topography, and no easements.

- If the block is irregular: The efficiency drops, rendering the project unviable.
- If there is an easement: The buildable area is further reduced.
- If the developer cannot use a zero-lot line: The footprint shrinks further.

The cumulative impact is that DPA-04 creates a "Goldilocks" scenario: the policy only works on "just right" blocks (flat, rectangular, wide frontage, north-to-rear). For the vast majority of Canberra's imperfect suburban blocks, the subtractive constraints render the yield unbuildable.

6. Dialectical Analysis of Conflicts

The analysis reveals fundamental tensions between the DPA-04 policy objectives and the technical realities of the Territory's regulatory environment.

6.1 Density vs. Canopy: The Zero-Sum Game

There is a dialectical conflict between the goal of "gentle density" (increasing floor area ratio) and the "Living Infrastructure" mandate (20% canopy cover + deep soil zones).

- **The Conflict:** The Residential Zones Technical Specifications require deep soil zones (soft infrastructure) to be unimpeded.¹⁸ However, the Municipal Infrastructure Standards (MIS 07) require massive paved areas for vehicle turning (hard infrastructure).⁵
- **The Outcome:** On a typical RZ1 block, the only way to satisfy both the vehicle turning requirement and the tree canopy requirement is to reduce the building footprint.
- **The Paradox:** The tree competes with the car. Under current engineering standards (which prioritize safety and forward exit), the car usually wins. The tree is then forced into the only remaining space—the potential building footprint. This reduces the yield from a comfortable 3-bedroom townhouse to a cramped 2-bedroom unit, or makes the project unviable. The government's dual objectives of "more housing" and "more trees" are spatially mutually exclusive on small blocks without a reduction in "car space."

6.2 Affordability vs. Feasibility

Submissions from industry bodies such as the Master Builders Association of the ACT highlight that regulatory complexity renders many infill projects financially unviable for smaller developers.²³

- **The Cost of Compliance:** The "Subtractive Constraints" force complex architectural solutions. A simple slab-on-ground dual occupancy is often impossible due to the need to maneuver around root zones and turning circles.
- **The Basement Solution (and Problem):** Developers may be forced to utilize basement parking to free up the ground plane for deep soil and living space. However, excavation costs in Canberra are high. Adding a basement to a dual occupancy project adds \$100k-\$150k per unit, pushing the end product out of the "affordable" Missing Middle bracket and into the luxury market.
- **Market Segmentation:** The result is that "mum and dad" investors—the traditional source of dual occupancy supply—are excluded. Only sophisticated developers with the capital to consolidate blocks (e.g., combining two 800m² blocks to create a 1600m² canvas) can efficiently manage these constraints. This leads to market concentration and slower delivery of supply.

6.3 Theory vs. Practice: The "Character" Defense

Community groups, such as the Inner South Canberra Community Council, argue that the density targets take no account of location or character.²⁴

- **The "One Size Fits All" Problem:** The 45-degree solar envelope and standard setbacks apply uniformly. However, the analysis shows that these rules have vastly different

impacts depending on lot orientation.

- **Solar Access:** A north-facing block can accommodate the 45-degree envelope easily. A south-facing block is severely penalized by the "solar fence" rule.¹⁷ The policy theoretically enables density everywhere, but practically restricts it to specific lot orientations, creating uneven development patterns that may degrade streetscape consistency.

7. Forecasting & Recommendations

Based on the Cumulative Spatial Impact Analysis, the following forecasts and recommendations are submitted to the Committee.

7.1 Locational Probability

The uptake of DPA-04 reforms will not be uniform across the Territory.

- **High Uptake Probability:** Inner North (e.g., Downer, Dickson) and Woden (e.g., Pearce, Torrens).
- **Reasoning:** These suburbs feature grid layouts with flat topography and, crucially, often have rear laneways or wide frontages. The "Service Lane" typology allows vehicular access to be separated from the living infrastructure, resolving the conflict between the car and the tree.
- **Low Uptake Probability:** Tuggeranong and Belconnen (Cul-de-sac suburbs).
- **Reasoning:** The curvilinear street patterns, irregular "pie-shaped" blocks, and lack of rear lanes in suburbs like Kambah or Kaleen create severe geometric constraints. The narrow street frontages of cul-de-sac blocks make satisfying the 5.5m driveway + separation + deep soil zone + building frontage mathematically impossible.

7.2 Affordability Projection

The DPA-04 reforms are unlikely to deliver affordable housing in the short term.

- **Scarcity Premium:** The scarcity of "technically buildable" land (land that survives the cumulative subtraction of constraints) will drive up the premium on suitable blocks (corner blocks, large frontages).
- **Construction Cost:** The construction complexity required to navigate solar envelopes and deep soil zones (cantilevers, suspended slabs, custom engineering) will ensure that the resulting dwellings are priced at a premium. The "Missing Middle" will likely emerge as "Luxury Compact" rather than "Affordable Infill."

7.3 Final Assessment: Feasibility Rating

Feasibility Rating: LOW to MEDIUM (without amendments).

While the zoning (RZ1/RZ2) now permits the use, the technical specifications effectively block it for the majority of standard allotments. The policy gives with one hand (Unit Titling) and takes away with the other (Forward Exit + Canopy Cover).

7.4 Recommendations to the Committee

To resolve the spatial paradox and unlock the intended density, the following technical amendments are recommended:

1. Relax "Forward Exit" for Dual Occupancies:

- Recommendation: Amend MIS 07 to explicitly allow reverse exit for dual occupancies (up to 2 dwellings) on local streets (low traffic volume).
- Impact: This single change would reclaim up to 20% of the site area (by removing the turning bay) for deep soil or living space, significantly improving feasibility without compromising major road safety.

2. Solar Envelope/Canopy Trade-off:

- Recommendation: Introduce a "Performance Solution" in the Residential Zones Technical Specifications where a developer can exceed the canopy cover target (e.g., 25%) in exchange for a relaxation of the solar envelope on the southern boundary.
- Logic: Acknowledge that deciduous trees provide shade that is as valuable as the building shadow is detrimental, allowing for more flexible building forms.

3. Waste Code Calibration:

- Recommendation: Amend the Development Control Code for Waste to mandate kerbside collection for developments up to 4 dwellings (currently discretionary/capped at lower levels in practice).
- Impact: Removing the on-site HRV turning requirement for tri-occupancies and townhouses is essential to unlock true "Missing Middle" diversity beyond the simple duplex.

4. Consolidation Incentives:

- Recommendation: Recognize that the geometric conflicts described above disappear on larger sites. DPA-04 should include stronger incentives (e.g., LVC remission) for block consolidation to create parcels (1400m²+) where cars, trees, and homes can coexist efficiently.

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