

AT PLACE MAP: PRACTICE PAPER

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ABSTRACT

This paper introduces Auckland Transport's (AT) AT Place Map (The Map): a methodology currently in development to identify and evaluate existing "Place value" (the benefit a location or space gives people and its surroundings).

The Map is a work in progress methodology to contribute to plan, design, build and manage transport initiatives so that they can protect and enhance features that are important for local communities. It combines quantitative information (human activity patterns, land-use diversity, and points of interest) and qualitative information (access, built and natural environment and socio-cultural attributes). Initial analysis identified 21 high Place value locations at regional-scale and one case study for in depth analysis.

Starting at region level, additional district/suburb scale analysis aims to analyse sites at a smaller scale, identifying case studies to test a qualitative toolkit to evaluate qualitative attributes to complement the quantitative analysis. Together, these methods will underpin an interactive, publicly accessible tool intended to inform project scoping, investment priorities, and engagement processes.

Early findings indicate that despite widespread recognition of place value insights, their use and the use of similar, more complex tools, are rare, suggesting the methodology is highly replicable. The Map's development has shown it can be a powerful evidence-based tool to inform design of transport infrastructure, reconfiguration of project's residual land, origin/destination audits, and communication of opportunities/constraints to stakeholders and support of local aspirations

Beyond its main applications, The Map can contribute to enhance Auckland's appeal and resilience by minimising alienation and antisocial behaviour, by providing access to opportunities and local identity and integrating it into urban transport projects to foster community, belonging, quality of life and opportunities.

1. INTRODUCTION

Context: Transport corridors have been long planned mainly for efficiency: moving people and goods quickly and economically. While town planners have considered communities, network planners prioritise traffic flow over local place needs (Waka Kotahi). Movement and Place frameworks aim to rebalance these goals, recognising everyday streets as both movement routes and public spaces (Transport for NSW, n.d.). This shift in transport and city planning design best practice requires multidisciplinary collaboration, with transport planners and town planners working together on developing a shared vision for better land use, street design, and access (NSW Government, 2024).

Problem: In Auckland, despite Place consideration in policy intent, strategic direction, principles and standards, Place value understood as the social, economic, cultural and environmental worth of a street as a destination (Department of Transport and Planning, 2024; Carmona, 2018), remains poorly implemented (Waka Kotahi NZ Transport Agency, n.d.; Auckland Transport, 2025; Office of the Auditor-General, 2025). Designs default to vehicle throughput (McGill & Millier, 2020; RNZ, 2025), with amenity and community aspirations considered late or inconsistently (Office of the Auditor-General, 2025), limiting streets as civic spaces (Auckland Transport, n.d.) and reducing ONF/RASF alignment (Waka Kotahi NZ Transport Agency, n.d.).

Objective: The Map is an analytic tool currently being developed to provide Place value insights to inform decision making for transport projects. It uses quantitative and qualitative evidence-based, scalable methodology that turns Place value into something measurable and usable. Defined to include the Auckland Region, The Map sets clear individual Place value levels (very low, low, medium, high, and very high), identifies what a Place is made of, and it provides the opportunity to compare locations with different Place values and types across the region. The Map contributes to better connect planning and design by identifying where projects should better integrate Place-led outcomes. It provides evidence to strengthen business cases and project briefs, when they intend to preserve or enhance Place value within project scopes.

2. AUCKLAND TRANSPORT CONTEXT AND STRATEGIC ALIGNMENT

In 2020, as other cities sought to better integrate Place into transport, AT launched the Roads and Streets Framework: a guide providing a method for identifying and balancing the *Movement* and *Place* functions of Auckland's roads and streets to inform planning and design decisions and modal priorities (Auckland Transport, 2020). While AT had a clear understanding of *Movement*, there was debate about *Place*: what is it? how to measure it? How to consider it?

To answer these questions, after a key debate concerned whether the Port of Auckland counts as a "Place," given its primary role in moving goods, the Place Map emerged as a repeatable method for assessing streets and their surroundings, recognising that great streets are not always great places. The resulting heat map would show varying Place value across the region, with high value as bright peaks and lower value in cooler tones (Beasley, 2026).

Thus, The Map idea came about as support for AT's Future Connect and Roads and Streets Framework strategic tools, by complementing their analysis of destination uses (Place function) with a tool for the analysis of destination significance (Place value).

During 2024, The Map was included in a broader programme aimed at better integrating Place and Placemaking, understanding Place as a location that people associate with a particular character and Placemaking as collaborative work with communities to shape public spaces to reflect their identities, values and needs (Rodriguez et al, 2025).

3. METHODOLOGY

Approach

Since relevant similar precedents (TfNSW’s VASP and TfL’s PERS) show that a practical solution for integrating qualitative data in transport projects has not been found (Place Score and Place Intelligence, 2025), the methodology approach is to develop 10 steps to test a simple analysis tool combining quantitative and qualitative information. Steps 1 to 6 and 8 are finalised while steps 9 and 10 are still being developed.

Step 1: Regional hexagonal grid and Place Value levels

We defined a hexagonal grid (see figure 01) to isolate different locations and allow their individual analysis. We chose hexagonal grid units as they are typically used in geographic heat-maps to avoid the bias of irregular or administrative boundaries (Wong, D.W.S.,2004).

Each hexagon acts as a single, consistent unit that clearly shows Place value distribution, with its size determining the scale of detail shown.

For the initial regional scale analysis, we used a 0.7 km² hexagon (~700,000m², ~840m diameter) as it fits typical metropolitan-scale analysis and is often used in transport, accessibility and land-use modelling because it balances spatial detail with computational efficiency (Esri, 2025).

The size of this geographical unit will be adjusted to produce an analysis at a smaller district and neighbourhood scale.

To align with the original ‘heat map’ concept for The Map, each individual hexagonal unit is colour coded to show their individual Place value score, where five different colours represent 5 different levels of Place value from Very Low to High (see Figure 2).

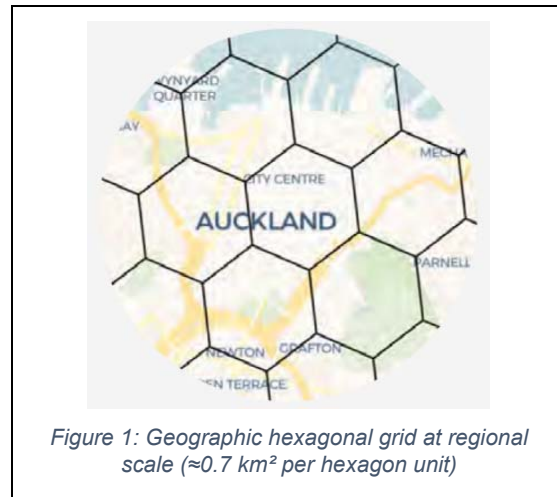


Figure 1: Geographic hexagonal grid at regional scale (≈0.7 km² per hexagon unit)

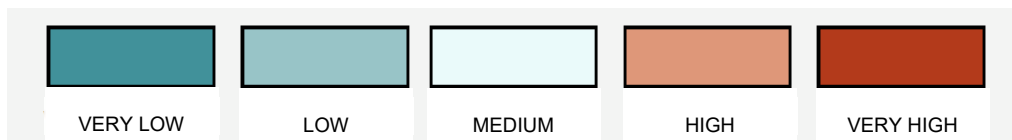


Figure 2: Colour coded Place value levels

Step 2: Quantitative information

We used three metrics to capture “magnetism” understood as an expression of a location attractiveness, driven by unique functions and amenities (Urban Magnets, n.d.). The metrics are:

(01) Diversity (How Diverse is a Place): Combined measure of land-use mix and activity, weighted by area and mobile signal counts. For this metric, diverse/active use locations score high, and monofunctional and/or inactive areas score low. Diversity is weighted by mobile phone data, since static land-use maps are coarse, episodic and prone to Modifiable Areal Unit Problem (MAUP) bias: a statistical bias where results of spatial analysis change simply because data are aggregated using different boundary definitions or scales (Wong, D.W.S., 2004).

(02) Offering (How many attractions in a Place): The total count of amenities (e.g. shops, parks, venues, services, etc) within a defined area, used as a simple measure of local amenity/feature density, regardless of the nature of the amenities. Higher counts mean greater amenity density, no

matter the size, type or how intensively used they are.

(03) Activity (How Busy is a Place): Sum of unique mobile devices registered within a period or point in time, and their “dwell time”: amount of time the signal stayed in a location, using desensitised anonymous mobile signals (not individual tracking) showing where people spend time. Information used is from a representative month in 2024. we extracted counts of unique devices and total dwell time per location.

Quantitative scoring: To calculate a Place value per hexagonal unit, raw quantitative information from each of the three basic metrics was re-scaled these from 0 (lowest) to 100 (highest) so that they can be scored with the same measurement units. and weighted as follows: Diversity 35%, Offering 25% and Activity 40%. The weighting reflects each dimension’s relative contribution to Place value. Activity (40%) is weighted highest as it is the strongest indicator of functional and social vitality. Diversity (35%) captures the mix of uses that sustain activity. Richness (25%) reflects experiential quality and distinctiveness, contributing slightly less. Together, these weightings balance function, diversity, and experience in the Composite Place Score.

Primary information sources: To score the three quantitative analysis metrics we selected the following primary information sources (see Figure 3): for the Diversity metric: Unitary Plan zoning (to identify variety of land uses), for the Appeal metric: Points of Interest (POIs) to identify attractive features, and for the Activity metric: cell phone location data (to identify movement and dwell time).

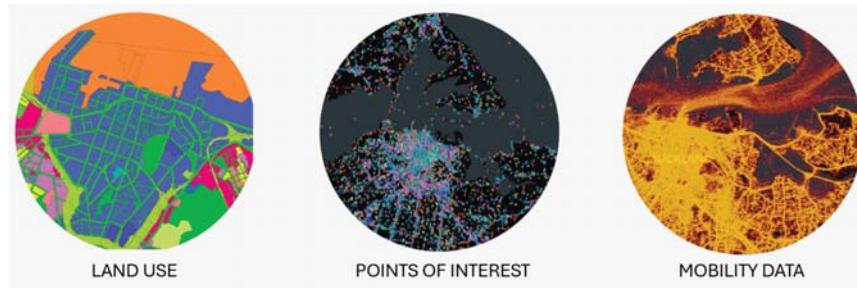


Figure 3: AT Place Map primary sources of information for Place value scoring

Secondary information sources: We recognised that metrics must be interpreted in context to avoid distortion. For example, a small community facility near a hexagon boundary can inflate Activity scores in adjacent hexagons. To improve accuracy, we used secondary information: movement networks (as a proxy for accessibility), population density (as an indicator of demand), and physical geometries such as roads, buildings, parking, and parks, to correct for these geographic effects (see Figure 4).



Figure 4: AT Place Map secondary sources of information providing context and accuracy.

Step 3: Draft Quantitative AT Place Map

Quantitative scores from Step 2, were used to produce a draft version of The Map, identifying 21 locations (including the CBD) as individual or clustered hexagonal units (see Figure 05). The

highest individual metric scores indicate the type of location. In The Map the colour scale shown in Stage 01 displays quantitative Place value from low to high as follows:

Dark blue, blue and light blue (very low, low and medium Place value): These areas have lower place value because they have little to no activity, fewer amenities, or mostly single land uses. They are residential neighbourhoods, industrial areas, or areas located near the urban limit, generally not suitable for Place placemaking unless linked to wider network or growth plans.

Light red (high Place value): These are growing or changing areas with some activity and a mix of land uses. They have clear potential to improve. With targeted upgrades such as better public spaces or improved access, these places can develop stronger place qualities.

Dark red (very high Place value): These places score the highest Place value. They are usually town centres, busy commercial areas, or major interchanges. They have the highest magnetism, with significant levels of activity, many different land uses, and many amenities, therefore their Place should be maintained and protected.

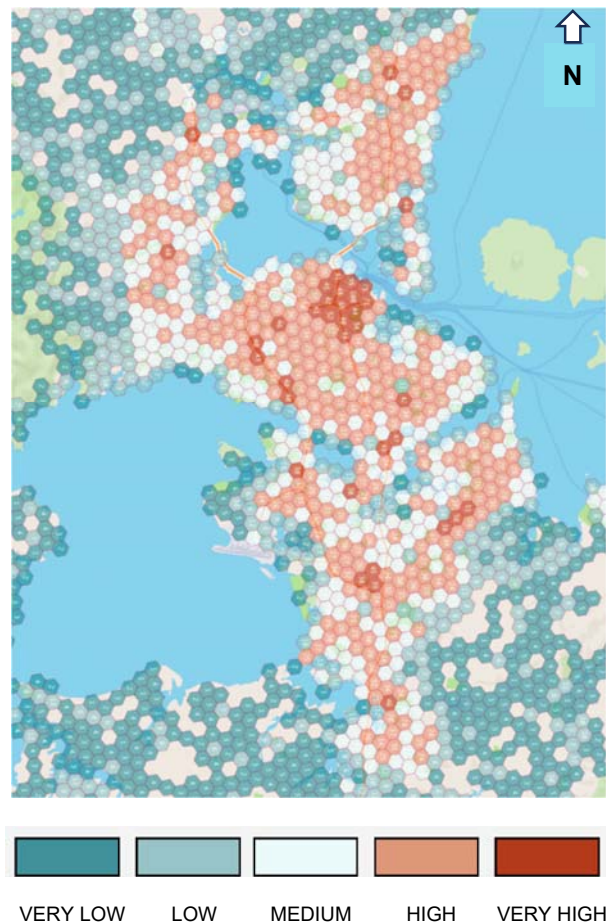


Figure 5: Draft Quantitative AT Place Map focused on Auckland's urban area, showing locations (hexagonal units) with different Place value scores, from low (dark blue), to high (dark red).

Upcoming analysis at a smaller district/precinct scale is expected to identify a larger number of smaller locations with relative high level of Place value, within the "High" and "Very high" levels of Place value as shown in the Draft Regional Quantitative AT Place Map.

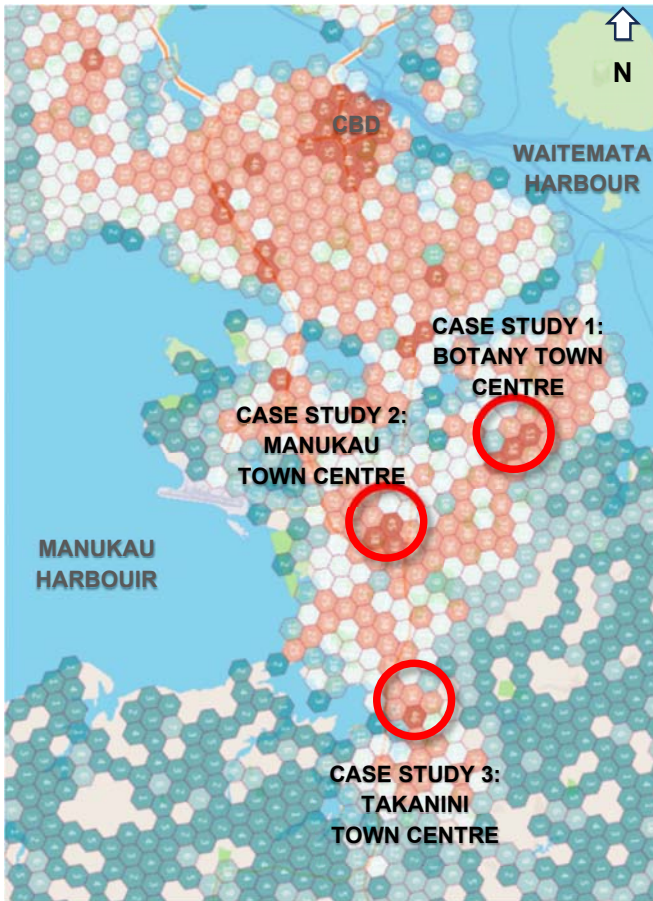
Step 4: AT presence overlay

Since The Map is intended to provide evidence for protecting or enhancing existing Place value where it may be affected by transport projects, we overlaid it with the locations of AT delivered Regional Land Transport Plan (RLTP) projects. This enabled us to identify where high Place value areas coincide with or are near AT/RLTP projects, highlighting opportunities to protect or improve Place value. Step 4 did not influence the Place value analysis, as it was an additional, separate step undertaken after the core quantitative scoring (see Step 2).

Step 5: Case studies selection

We selected three case study locations from the pairs of Place value locations and AT-RLTP projects to refine the quantitative analysis (Step 6) and undertake a qualitative analysis (Step 7).

To maximise the impact of potential protection or enhancement of Place value through transport projects, case study locations were selected in areas of high socioeconomic deprivation, limited access to opportunities, and high exposure to transport-related harm, as identified in AT’s Equity Framework (Auckland Transport, 2024). Chosen locations (Botany Town Centre, Manukau Town Centre, and Takanini Town Centre) represent three different levels of deprivation, limited opportunities and transport disadvantage (see Figure 6).



Case study 1: Botany Town Centre



Case study 2: Manukau Town Centre



Case study 3: Takanini Town Centre

Figure 6: Three case studies selected in areas of high socioeconomic deprivation, limited opportunities, and transport-related harm.

Step 6: Detailed quantitative analysis

Among the 3 case studies selected in Step 5, Takanini Town Centre is shown here as a sample of detailed quantitative analysis. Quantitative analysis shows a composite Place score of 34.05/100, reflecting high human activity, moderate land-use diversity, and low levels of points-of-interest.



Metric	Score	Weight %	weighted score
(01) Diversity	26	35	9.1
(02) Offering	23	25	5.75
(03) Activity	48	40	19.2
Composite score			34.05

Figure 7. Takanini Town Centre quantitative analysis

These results suggest:

1. **Diversity:** Low land-use diversity indicates a car-centric environment dominated by retail and parking, with community, recreational, and health uses significantly underrepresented.
2. **Offering:** Low points-of-interest richness reflects extensive low-density residential areas with few destinations.
3. **Activity:** Moderate pedestrian and visitor activity is heavily skewed toward vehicle trips. High parking demand suggests opportunities for mode shift.

AT presence: AT’s presence is high due to its extensive physical assets within the area (e.g., roads, footpaths) and the Level Crossing Closure Programme. Once the level crossing is replaced, accessibility may improve via Walters Road, though the resulting impact on the score is uncertain.

Step 7: Qualitative analysis framework.

We developed a simple assessment to capture and interpret community experiences and perceptions, identifying what works, what doesn’t, what feels right or wrong, and what improvements are desired (Place Intelligence, 2025). The process draws on on-site observation, lived experience, and community sentiment as defined by Place Score and Place Intelligence (Place Score; Place Intelligence, 2025). Data will be collected through site audits, intercept interviews, behavioural mapping, and surveys. The core components of the assessment are:

- (1) **Qualitative Site Analysis:** Observation to gather information about the lived experience of a place, its character, atmosphere, and how people appear to use and feel about it. It interprets social, cultural, and spatial cues to identify issues and opportunities. Key metrics include observed safety and accessibility; circulation and connectivity; land-use mix and activity patterns; streetscape quality and amenity; heritage; biodiversity; canopy cover; and social and cultural cues.
- (2) **Community Voice:** What people explicitly say about a Place in terms of stated views, observations, needs, and preferences gathered through surveys and interviews, or other feedback channels. Key metrics defined for it are perceptions of strengths & weaknesses, specific

likes/dislikes, stories and narratives about a Place.

(3) Community Sentiment: how people feel about a place: the emotional tone or affective response (e.g., comfort, pride, safety, frustration) identified through language cues, or other behavioural or attitude indicators. Key metrics defined for it are Comfort & safety, Belonging & pride, Emotional tone (relaxed vs hurried).

(4) Community Desire: what people want for a place: their preferred improvements, aspirations, and priorities for change, as expressed through engagement or through patterns of use and behaviour. Key metrics defined for it are Aspirations & priorities, Specific desired improvements, and Future visions for a particular Place.

Refined quantitative analysis and qualitative analysis in selected locations will be undertaken during February 2026.

Step 8: Quantitative and Qualitative integration

We will combine all quantitative and qualitative outputs into a single, cohesive geospatial resource. This involves developing a final map layer or geodatabase that consolidates every dataset produced throughout the project.

To ensure smooth interoperability, Place Intelligence data is checked for compatibility with AT's GIS environment and refactored where required. The project team then works closely with AT's GIS specialists to integrate the refined datasets into AT's existing system, followed by functionality and accuracy testing of the GIS layers.

In parallel, a simple tablet-based web application is developed to support the collection of key qualitative insights during site audits, ensuring that observational, experiential, and community-derived information can be seamlessly added into the unified spatial database.

We will do this recognising that, while the quantitative assessment measured Activity, Offering, and Diversity from an urban planner or designer specialist to establish a hierarchy of place opportunity, integrating it with a qualitative assessment will ensure The Map reflects community values in terms of the opinions, lived experience and aspirations of residents, not just in terms of observable conditions.

Step 9: Online tool

We will bring all The Map's information together into one easy-to-use, publicly available online tool to socialise. This includes creating a final map that combines all quantitative and qualitative scores compiled in Step 8. To make sure everything works smoothly, The Map's information will be checked against AT's GIS system and adjusted where needed. The team will work with AT's GIS specialists to load the data into AT's system and test it for accuracy and performance.

At the same time, a simple tablet-based web app is created to collect key qualitative information during site audits, so observations, experiences, and community insights can be added directly into the shared spatial database.

4. APPLICATIONS

The Map can be applied in ten different ways within three broad project development stages: Planning, Delivery, and Management. Each involving specific actions to guide AT in aligning infrastructure with Place and placemaking outcomes as follows:

(1) Planning: Identifying where Place and placemaking efforts can or should focus, building up data to support or oppose transport related initiatives. Key focus areas are:

- **Assessment of regional places of significance:** Identification of important urban areas with high Place value, to ensure they inform early stages of projects (e.g. business case).

- **Align with AT/Auckland Council objectives:** Ensure locations with place value (as defined in section 3 “Methodology” above) are integrated in transport investment and planning objectives.

(2) Delivery: Ensuring that AT’s infrastructure delivery incorporates place outcomes from the outset, including:

- **Integration of Place & Placemaking into project briefs:** Include Place improvement goals into transport project scoping, within what is allowed by planning rules and regulations.
- **Oversee capital works with place outcomes in mind:** Ensure design and delivery teams implement place-oriented strategies throughout project execution.

(3) Management: Supporting long-term value creation informing maintenance investment and optimisation of outcomes overtime with:

- **Post-occupancy evaluation:** Assessment of how well place upgrades are working in practice.
- **Active place management:** Maintain, adapt, and invest in place assets over time for continued impact and community benefit.

Takanini Origin & Destination: The Takanini Place Map has been used to produce an Origin & Destination audit for the Walters Road Level Crossing removal and other 5 level crossing removals nearby, as part of the programme replacing six at-grade crossings with grade-separated alternatives.

We produced a geofenced Origin and Destination analysis (see Figure 8a), identifying key origins, destinations and inter-movement volumes. Also an Activity Density heat map (see Figure 8b), identifying high-activity areas (yellow) and low-activity areas (dark red), with Southgate Shopping Centre as the main hub (green circle) and Spartan Road as a low-activity area (blue circle).

These insights support prioritising investment on corridors like Walters Road and/or reallocating resources away from low-activity areas such as Spartan Road.

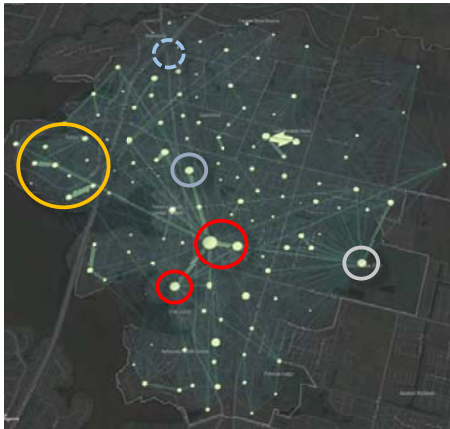


Figure 8a: Takanini Town Centre Origin and destination analysis



Figure 8b. Takanini Activity Density heat map

4. FINDINGS

So far, the tool has demonstrated its value to identify Place value. The quantitative initial The Map succeeded in identifying and assessing different levels of individual Place value locations and summarised them in an easy-to-use map for the whole of the Auckland region. Around 20 high Place value locations has been identified and used as a long list to define case studies for

Unlike other similar work, The Map provides a simple, highly replicable and functional tool for Place value assessment. While many transport agencies across the world recognise the importance of Place outcomes, particularly using qualitative data, implementation has been limited.

Global examples illustrate that a solution for (a) bridging the gap between planning for Place value integration into transport initiatives and (b) integrating qualitative data in transport projects has not been found. This indicates an opportunity for AT to become a global leader in solving this identified need (Place Score 2025). Beyond transport, The Map development has demonstrated its potential value for other kinds of initiatives

Opportunity for Leadership: While many transport agencies recognize the value of qualitative place insights (especially of qualitative data), they rarely apply them, and no practical, comparable tools currently exist. For example, related documents such as the “Estimating placemaking impacts of transport projects in business cases” by Transport for New South Wales provide high level guidance, but not a specific tool to measure Place value using quantitative and qualitative information.

Other examples of related evaluation tools considering the qualitative experience of a place are limited, in that this data is obtained through an auditor from the organisation’s internal team and not the community (Place Score and Place Intelligence (2025)). This means The Map can position AT as a potential global leader in place-value analysis with a highly replicable, practical and specific approach.

Scale Matters: Regional quantitative analysis shows limited opportunities for integrating place outcomes within RLTP projects due to their scale and scope. The Map is more effective at district or suburb level, where Auckland Council projects emphasize placemaking and local boards and communities have greater influence.

Qualitative analysis: Validation by Place Score (“place experience” specialists) confirms qualitative methodology and metrics are on the right track and highlights the need to extending validation to quantitative method and to sense check their mutual fit/suitability to ensure a robust methodology. We are actively seeking and receiving feedback from relevant specialists to provide independent reviews.

Expanding Analytical Potential: The Map with movement data for origin/destination audits during project development has delivered insights that can contribute with community engagement processes: During engagement for the Level Crossing Removal project currently a design stage. It has also helped to identify and design out risk for future project implementation, by identifying critical access routes for local businesses,

Understanding Place Personas (fictional but evidence-based type of user): Quantitative high level and anonymous description of people traveling to, from, and through identified places provides basic persona insights, helpful for informing transport projects and other physical interventions.

Identifying Community Hot Spots: Points of Interest analysis supports targeted co-design and engagement focused on areas that matter most to communities. Qualitative analysis will validate why spots are important and guide how local aspirations can be embedded into physical design.

5. CONCLUSIONS

The Map demonstrates strong potential as a practical, evidence-based framework for integrating Place value into transport planning, design, and investment.

By combining quantitative data, such as activity patterns, land-use diversity and points of interest with qualitative insights gathered through observation, community voice, sentiment, and aspirations, the methodology bridges the gap between technical analysis and lived experience.

Early application across Auckland has shown that Place value can be measured consistently, compared regionally, and used to guide decisions that better reflect community needs and local character.

The approach not only identifies high-value places but also highlights areas facing significant deprivation, limited opportunity, and transport-related harm, where the positive impact of integrating Place outcomes would be optimised.

The Place Map has already proven useful in real projects, including informing Origin-Destination audits and supporting place-sensitive planning for level-crossing removals. Its flexibility to be applied at regional, district, and neighbourhood scales allows it to support a wide range of applications, from strategic planning to project delivery and long-term place management.

With no comparable tools currently used internationally, the methodology positions AT as a potential leader in place-based transport planning.

To realise this potential, several steps are recommended. AT should follow up on steps already defined related to expanding the Place Map to include more district-scale locations and additional contextual layers such as biodiversity, canopy cover, and socioeconomic deprivation.

The Map should be fully integrated into AT's GIS platform and developed into a publicly accessible online tool to support wider organisational and community use.

Finally, detailed qualitative site audits should be supported through a portable software application, combined with a concise AT Place Vision that links desired place outcomes to clear indicators for planning, delivery, and management.

6. ACKNOWLEDGEMENTS

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