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Parkland Provision and Walking Access in Selected U.S. Cities: A Comparative Assessment

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Abstract

Urban park assessments frequently treat the amount of parkland and the proximity of parks as interchangeable indicators of adequate provision. This article examines their relationship through a comparative secondary analysis of Washington, DC, Minneapolis, San Francisco, New York, Chicago, Los Angeles, Houston, and Phoenix. It uses the archived 2024 ParkScore data and scholarship published before December 1, 2024. The analysis distinguishes land allocation, population coverage, neighborhood park space, and the conditions that make access usable. Across the selected cities, parkland shares range from 10.2% to 23.8%, whereas reported ten-minute walking coverage ranges from 49% to 100%. The most instructive contrast is between Minneapolis and Phoenix: their land shares differ by only 0.5 percentage points, but walking coverage differs by 50 points. The results also identify substantial neighborhood park-space disparities in several cities with almost universal proximity. These comparisons do not isolate the effects of density, investment, climate, or governance; they demonstrate that aggregate acreage and proximity measure different achievements. The article develops a framework for interpreting those achievements together, while retaining quality, capacity, inclusive mobility, and residential stability as separate questions. It proposes targeted acquisition where residential coverage is missing, improvements to routes where parks are physically disconnected, and attention to capacity and usability where proximity is already extensive. A defensible assessment therefore evaluates whether people can reach, use, and continue to benefit from suitable parks, rather than allowing success on one indicator to substitute for evidence on the others.

Keywords: urban parks; walking accessibility; park provision; environmental justice; ParkScore; comparative urban planning

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1. Introduction

Parkland provision poses a practical question about how cities allocate scarce urban land, but the public value of that allocation depends partly on its relationship to everyday life. An extensive park system can protect landscapes and provide destinations for recreation, while a small neighborhood park may support brief visits that fit around work, school, and caregiving. Neither function adequately describes the other. The difficulty for comparative assessment is that an acreage total is visible and easy to communicate, whereas the opportunity to reach a suitable park depends on the spatial arrangement of residents, entrances, routes, and activities. This article treats provision and walking access as related but distinct dimensions of public service. Its central proposition is that a city should be evaluated both for the land it secures and for the opportunities that land makes available to its residents.

The distinction matters because each indicator implies a different planning response. If the problem is insufficient total land, acquisition appears to be the direct remedy. If the problem is that existing parks are separated from residents by long routes, inaccessible entrances, or an uneven distribution of facilities, acquisition alone may have limited effects. Conversely, a neighborhood can gain a small park and meet a proximity threshold without gaining enough space for the activities residents value. A defensible comparison must therefore avoid choosing a preferred measure before specifying the problem. Following the measurement distinctions examined by Ekkel and de Vries (2017), this article uses multiple indicators to ask which deficits are visible, which remain unresolved, and which interventions would plausibly address each one.

Comparative rankings provide a useful starting point because they assemble information that would otherwise be difficult to obtain consistently across jurisdictions. Trust for Public Land's archived 2024 ParkScore table contains comparable measures for large U.S. cities, including parkland share, walking proximity, and neighborhood differences in park space (Trust for Public Land [TPL], 2024a). However, the existence of a common reporting system does not make its component measures interchangeable or establish that the highest overall rank answers every policy question. A composite score necessarily combines judgments about what matters and how achievements should be weighted. The present assessment therefore examines selected underlying measures rather than reproducing the overall ranking. This makes the comparison narrower, but it also makes its substantive meaning easier to inspect.

Equity adds a further complication: an apparently successful citywide average can coexist with unequal opportunities within the city. The relevant inequality may concern travel distance, the amount of space shared by nearby residents, the condition of facilities, or whether users feel welcome. Yet it would be equally misleading to assume that every dimension always disadvantages the same population in the same way. Rigolon's (2016) review identifies important differences between findings about proximity and findings about acreage or quality. The implication for this article is methodological as well as ethical. Equity should be investigated as a set of specific relationships between populations and resources, with explicit denominators, rather than inferred from a city's reputation or from a single favorable or unfavorable statistic.

The health rationale for parks strengthens the case for careful measurement, although it does not justify assuming that more mapped access automatically produces better health. In a Philadelphia cluster randomized trial, South et al. (2018) found improvements in some self-reported mental-health outcomes following vacant-lot greening; the overall poor-mental-health measure did not show a statistically significant reduction. That intervention differed from opening a municipal park or changing a walking catchment. Its relevance here is that neighborhood environmental improvement can matter, while the particular exposure and outcome still require specification. Accordingly, this study evaluates opportunities for park access and discusses potential pathways to benefit without estimating health effects that its city-level data cannot measure.

The selected cities make the comparison informative without constituting a representative sample of urban America. Washington, DC, Minneapolis, San Francisco, New York, and Chicago provide cases with very extensive

reported proximity; Los Angeles, Houston, and Phoenix provide contrasting cases with larger uncovered shares. The selection also spans different regional settings and municipal geographies. Its limitation is deliberate: these cases illuminate contrasts rather than support population-wide estimates. The article asks three questions. How closely do parkland share and walking coverage correspond in these cities? What additional information is supplied by neighborhood park-space differences? What planning conclusions remain defensible once the limits of the indicators and the observational design are acknowledged?

The contribution is an original interpretation of existing evidence rather than a new inventory of parks or an original pedestrian-network model. The analysis calculates transparent contrasts from a single archived reporting year and places them alongside a critical review of accessibility and equity research. This design cannot establish why a particular city has its observed pattern, but it can reject interpretations that the indicators themselves do not support. It also produces a practical decision framework: identify the type of deficit, investigate its local mechanism, choose an intervention matched to that mechanism, and measure whether the intended residents benefit. That sequence gives the comparison value beyond a list of city scores while keeping its conclusions proportionate to the evidence.

2. Conceptual foundations and literature

2.1 Provision, proximity, and the interpretation of access

Parkland provision is a necessary starting point because a city cannot distribute opportunities that its public landscape does not contain. Yet the meaning of provision changes with the denominator. The proportion of municipal land designated as parkland describes allocation within an administrative territory, whereas park acreage per resident describes a population-adjusted stock. Neither measure identifies where residents live relative to entrances. A hypothetical city could increase its parkland share by incorporating a large peripheral reserve while leaving most residential walking distances unchanged; another could improve proximity through several small neighborhood sites without substantially changing its total acreage. These are analytical possibilities, not findings about the selected cities. Their implication is that land allocation, population-adjusted supply, and residential reach should remain distinct dimensions throughout the comparison.

Walking access adds a spatial relationship between residents and destinations, making it more informative than the presence of a park somewhere within a municipality. Nicholls (2001) demonstrated the importance of comparing straight-line and network-based measures in a Texas park system. A circular buffer assumes movement across intervening space, whereas an actual trip must follow available routes. Nevertheless, a network calculation is only as accurate as its representation of entrances, crossings, and permitted paths; a sophisticated algorithm does not repair incomplete geographic data. Network access provides a stronger approximation of pedestrian opportunity, provided that its underlying map is validated. The distinction helps explain why the present comparison treats published walking-access percentages as estimates of potential reach rather than observed travel behavior.

The choice among accessibility measures also affects which inequalities become visible. Talen and Anselin (1998) compared facility counts, gravity-based potential, average travel distance, and nearest-playground distance in Tulsa, demonstrating that alternative measures produced different spatial patterns and equity conclusions. This does not mean that accessibility is arbitrary or that every indicator is equally useful. Each asks a different question: whether a facility exists locally, how far the nearest option lies, or how many weighted opportunities surround residents. The conceptual task is to specify the public obligation being assessed before selecting its measure. For a minimum walking-access commitment, population coverage is appropriate; for adequacy of recreational choice, it must be supplemented. Conflicting results can consequently reveal different service problems rather than simple analytical error.

Substantial aggregate greenspace can coexist with uneven access among social groups. Comber et al. (2008) demonstrated this distinction through network analysis in Leicester, where an abundant

overall supply did not eliminate differences in access by ethnicity and religion. The relevance to U.S. comparisons lies in the measurement principle, although neither the social categories nor the city's greenspace definition can be transferred directly. A municipality-wide average combines people with potentially different destinations and routes; it cannot establish that each constituent population receives comparable opportunities. Aggregate coverage can screen for broad deficits, after which its distribution requires investigation. Evidence from another country strengthens the rationale for disaggregation without supplying missing racial, income, or neighborhood estimates for the cities examined here.

The nearest available park is a useful indicator of a basic opportunity, but it is a restricted description of the surrounding recreational environment. Ekkel and de Vries (2017) found that cumulative-opportunity measures were more consistently associated with health than residential proximity measures across the literature they reviewed. Their review also emphasized variation in definitions and measurement, which prevents treating one indicator as universally superior. The relevant inference is that measurement should follow the proposed function. A nearby small space may support a brief pause, while longer walking, organized games, or contact with extensive vegetation may require different facilities. A coverage statistic remains valuable for detecting absent local options, but it cannot establish that the available option supplies all functions associated with the broader category of greenspace.

Park features can alter the usefulness of an accessible destination. Kaczynski et al. (2008), studying 33 parks and activity logs from 380 adults, found that parks with more features were more likely to be used for physical activity; size and distance were not significant predictors in their analysis. That result challenges the assumption that increasing acreage or reducing distance alone guarantees greater activity, yet it does not demonstrate that proximity is generally irrelevant. Observational findings depend on the available variation, population, and outcome being measured. Access to a location and access to a suitable activity setting consequently require separate evaluation. A city may satisfy a spatial coverage objective while still needing better trails, facilities, or other locally valued features to make the opportunity useful.

Evidence concerning size and proximity becomes clearer when walking outcomes are differentiated. Giles-Corti et al. (2005) associated access to large, attractive public open space with higher walking in Perth, while Sugiyama et al. (2010) distinguished attributes associated with any recreational walking from those associated with sufficient amounts of walking. These findings offer a reason to consider park quality alongside proximity, although their observational Australian settings do not yield transferable intervention effects for U.S. municipalities. They also caution against interpreting a single walking-access percentage as a physical-activity outcome. Access can contribute to several behavioral pathways with different requirements. A comparative assessment can identify opportunities for walking to a park while reserving judgments about walking within it, activity duration, and health effects for appropriately designed evidence.

Coverage additionally overlooks how many potential users share the same opportunity. Dony et al. (2015) developed a variable-width floating catchment approach incorporating park attractiveness and multiple transport modes, illustrating how access patterns change when supply, demand, and travel assumptions become more explicit. Such models can represent recreational choices more fully than a nearest-park threshold, but their catchment widths and attraction parameters introduce assumptions that require justification. Greater complexity therefore offers a different analytical capability rather than automatic empirical truth. For the present comparison, the lesson is to retain transparent coverage measures while recognizing their capacity limitation. Two places with similar shares of residents near parks may still differ in the amount and variety of accessible space available to those residents, especially where catchments overlap densely populated neighborhoods.

A pedestrian route is also experienced differently by people with different mobility capabilities. Lepoglavec et al. (2023) examined wheelchair movement on park trails in Zagreb and documented the relevance of surface and

longitudinal slope. The small, context-specific study cannot establish universal thresholds for U.S. paths, and wheelchair users do not represent every form of disability. Its broader methodological contribution is to show why physical proximity should not be equated with independent usability. A standard walking threshold remains useful as a common reporting convention, while its inclusiveness requires empirical testing. Route and entrance audits conducted with people who experience mobility barriers would test a dimension of access that an aggregate city percentage cannot resolve, even when the underlying map accurately records distance.

Residential access likewise captures only one part of everyday geographic opportunity. Kwan (2012) describes the uncertain geographic context problem: the spaces and periods relevant to an individual's experience may differ from the administrative or residential units used to represent that experience. This concern does not make home-based measures unhelpful, since a dependable local opportunity can matter independently of visits elsewhere. It does limit their interpretation as complete exposure measures. Residential service obligations should therefore be evaluated separately from all the places people actually encounter. A city comparison can legitimately assess whether residents have nearby public options, while recognizing that workplaces, schools, caregiving journeys, and time constraints may shape use beyond the residential setting. Establishing those patterns would require additional information.

Municipal boundaries create a related problem for comparing provision. Fotheringham and Wong (1991) showed that spatial aggregation and zoning can affect statistical relationships, establishing a general reason to examine how analytical units shape conclusions. Their work does not invalidate descriptive city statistics, but it discourages treating those statistics as natural or interchangeable representations of urban life. In this assessment, the practical concern is that municipal territories can contain very different mixtures of settled neighborhoods and other land. Residents may also use parks across a boundary. Municipalities remain transparent reporting units, provided that conclusions are confined to their boundaries. A finding about citywide parkland share should not silently become a claim about metropolitan provision or the conditions experienced by a typical neighborhood.

Finally, an association between environmental opportunity and behavior does not identify the effect of changing that environment. McCormack and Shiell (2011) reviewed built-environment studies that addressed residential self-selection or used quasi-experimental designs, showing why causal assessment requires more than a cross-sectional relationship. Their review concerns the built environment broadly and cannot supply a park-specific effect for this comparison. It nevertheless establishes the inferential boundary needed here: populations, preferences, resources, and urban conditions can vary together. City contrasts can identify questions and plausible intervention targets; estimating health returns requires a different design. Observed proximity can justify closer investigation of underserved locations, but evaluating whether a particular investment increases walking requires temporal evidence, suitable comparison conditions, and direct measurement of the intended outcome.

2.2 Equity, Park Quality, and the Conditions of Benefit

The literature supports treating park access as a multidimensional relationship between residents and public resources. Rigolon’s (2016) review distinguished proximity, acreage, and quality, finding less consistent evidence of inequality in proximity than in the latter dimensions. A qualification follows directly: a city can perform well on one indicator while leaving substantial disadvantage visible in another. The apparent contradiction disappears once the question changes from whether a park is nearby to what opportunities nearby parks provide. For comparative assessment, proximity should therefore be interpreted as an initial condition of access rather than a complete distributive outcome. This distinction also prevents a normative shortcut. Counting residents within a service area identifies a geographic achievement, but deciding whether that achievement is adequate requires an explicit account of the activities, capacities, and needs that public provision is meant to support.

Baltimore demonstrates why superficially favorable proximity statistics require careful interpretation. Boone et al. (2009) found that African American residents were more likely than White residents to live within the study's walking-distance threshold, while having access to less park acreage; their historical analysis also situated contemporary distributions within segregation and institutional decisions. These results do not establish the same relationships in other municipalities, and the study's potential congestion measure should not be mistaken for observed crowding. Their wider analytical implication is nevertheless substantial: a present-day map can conceal both unequal capacity and the processes that produced residential location. A defensible comparison consequently separates the descriptive question of who is currently close to parks from the historical question of how those locations became available and the evaluative question of whether available resources meet present needs.

Park service capacity provides a further challenge to binary coverage measures. Sister et al. (2010) used park service areas in the Los Angeles region to identify greater potential pressure on parks serving many Latino, African American, and low-income residents. However, a model that allocates residents to nearby parks cannot fully represent destination choice, temporal variation, or travel beyond the immediate neighborhood. Capacity indicators therefore deserve interpretation as signals of possible undersupply rather than direct accounts of visitor experience. For planning purposes, this suggests a two-stage inquiry: locate places where many residents depend on limited resources, then examine actual use and unmet demand locally. The resulting investment decision can distinguish a neighborhood needing its first park from one needing additional space, more usable facilities, or a different distribution of activities within existing parks.

Equity assessment also depends on the standard of fairness being applied. Equal walking distances, equal park area per resident, and priority investment for residents with fewer alternatives describe different commitments; none can be silently substituted for the others. An exclusively equal allocation might leave substantial disadvantage intact, while an allocation based on need requires choices about which needs count and how competing claims are weighted. The distributive objective therefore needs to be stated before performance is evaluated. A city comparison can report common indicators without presuming that a single ranking resolves those choices. This makes disagreement productive: residents and planners can identify whether a dispute concerns the accuracy of the data, the meaning of access, or the public values used to allocate scarce resources, rather than treating every disagreement as a measurement failure.

Park quality complicates the transition from geographic opportunity to beneficial use. Nguyen et al. (2021) reviewed a heterogeneous body of research in which quality encompassed different environmental characteristics and health relationships. That heterogeneity cautions against assigning one universal quality score to all parks or assuming that a larger amenity inventory necessarily serves every population better. An athletic field, a shaded seat, and a quiet natural area support different purposes, and their relative importance depends on the intended users and surrounding alternatives. Comparative research should therefore identify the dimensions omitted by its chosen indicators rather than describing unmeasured quality as if it had been assessed. A useful audit would relate park conditions to specified activities and users, allowing differences in function to remain visible instead of absorbing them into an unexplained composite measure.

Social experience can reinforce or undermine the practical value of physical provision. McCormack et al. (2010) found that qualitative accounts of park use connected safety, maintenance, amenities, and aesthetics with perceptions of the social environment. Such evidence cannot produce a universal causal coefficient, and reported insecurity should not automatically be equated with measured danger. Nonetheless, the distinction between objective conditions and experienced acceptability is precisely why local testimony matters. A park can be publicly owned and geographically close while failing to offer some residents a comfortable or welcome setting. Environmental audits should consequently be combined with evidence from users and nonusers. Asking only current visitors

risks overlooking the reasons other residents stay away, while relying only on mapped facilities risks treating social exclusion as an individual preference rather than a condition requiring investigation.

Evidence from the United States similarly places park management within the account of realized benefits. Cohen et al. (2016) observed a national sample of neighborhood parks and documented differences in use associated with programming, outreach, and neighborhood income. Because the analysis was observational and based on bounded observation periods, it does not establish a guaranteed causal return from a particular management expenditure. It does, however, show why land acquisition and park opening are incomplete measures of service delivery. A facility must remain operational and offer activities that residents can use if its spatial promise is to become an everyday opportunity. The resulting planning implication is to assess continuing management commitments alongside capital provision, while evaluating use by different groups rather than assuming that an increase in aggregate attendance represents an equally distributed improvement.

The health-equity literature gives a reason to prioritize underserved populations while also limiting what such prioritization can promise. Rigolon et al. (2021) found generally stronger beneficial green-space associations among lower socioeconomic groups, with differences across geographic settings and no similarly clear pattern across racial and ethnic groups. These findings concern a varied evidence base rather than a single standardized intervention. A park project therefore cannot be assigned a health-equity effect merely because it serves a disadvantaged neighborhood. The more defensible inference is that improving local opportunities may be particularly consequential where alternatives are limited, making both provision and evaluation important. Evaluation should examine whether intended users obtain usable access and whether their outcomes improve, separating this question from whether a citywide average changes after an investment.

Social cohesion offers another plausible pathway between parks and well-being, although its direction cannot be assumed. Jennings and Bamkole (2019) describe relationships through which green space can support social interaction and through which social connections can themselves encourage participation. This reciprocal relationship complicates an interpretation in which parks simply produce cohesion as an automatic downstream benefit. An organized community may secure better facilities, sustain activities, and report stronger attachment, leaving both selection and feedback within the observed association. Social connection can thus be both a condition and an outcome of park provision. This supports attention to governance and participation while avoiding claims that an access percentage measures community trust, inclusion, or belonging. These social qualities require evidence that directly addresses residents' relationships and experiences.

Intervention evidence helps refine the practical question from whether green space is beneficial to which changes produce useful outcomes. Hunter et al. (2019) found support for interventions combining physical improvements with measures encouraging use, while identifying insufficient evidence for firm conclusions about equity effects. The heterogeneous and often nonrandomized evidence prevents a universal prescription, particularly where activities, populations, and outcome measures differ. Still, the distinction between improving an asset and enabling its use provides a coherent basis for project design. A proposal can specify the intended physical change, the residents expected to benefit, the practical support required, and the outcomes to be observed. Treating these as connected but separately testable elements makes investment accountable without implying that a favorable result in one setting guarantees equivalent benefits in another.

Greening also raises a distributional question over time: whether those intended to benefit remain able to enjoy an improved neighborhood. Wolch et al. (2014) identify the possibility that environmental improvements raise housing costs and contribute to displacement, complicating the pursuit of environmental justice. This argument does not establish that every park causes displacement or that underserved communities should receive inferior public environments. It instead changes the unit of evaluation from a place alone to the people whose opportunities the

investment is intended to improve. A higher access percentage can coexist with changes in who can afford to live within the accessible area. The resulting policy challenge is to connect park provision with housing stability and resident participation, and to distinguish neighborhood improvement from durable benefit to the households previously experiencing deprivation.

Small-scale greening cannot be assumed to resolve that challenge by itself. Rigolon and Németh's (2020) study across ten U.S. cities linked gentrification more strongly to park location and greenway function than to park size, questioning a universal small-park remedy. Their observational analysis of neighborhood change does not identify every household's experience or isolate all competing development influences. Park form must therefore be evaluated within its wider land and housing context; project size alone provides inadequate assurance of equitable outcomes. For the present comparison, this means that neither acreage expansion nor greater walking coverage should be interpreted as the final measure of success. Both are important public achievements whose social value depends on usable facilities, inclusive governance, and the continuing ability of intended residents to obtain their benefits.

3. Research design and methods

3.1 Scope and source selection

The study is a purposive, cross-sectional comparison of eight municipal jurisdictions using published secondary data. Its empirical foundation is the archived 2024 ParkScore ranking table, released with the 2024 index in May, which falls within the publication cutoff of November 30, 2024 (TPL, 2024a, 2024b). Restricting the comparison to one reporting edition reduces the risk of combining city values from different years. It does not mean that every underlying input was observed simultaneously, because administrative inventories and population estimates may have different reference dates. The results should therefore be understood as a comparison within the 2024 reporting system, not as a synchronized field survey conducted on one date.

Cities were selected to make contrasting combinations of provision and access visible. The sample includes several cases near the upper limit of the walking measure and three with substantially lower coverage, allowing close examination of whether similar land shares imply similar access. This is an outcome-informed selection strategy, not a random draw or a preregistered test. It is appropriate for illustrating measurement relationships but unsuitable for estimating the national frequency of each pattern. The analysis consequently does not describe its sample average as an American urban average, does not assign sampling confidence intervals to the eight cases, and does not use the cases to rank regions. Its claims concern the reported cities and the logical interpretation of the measures.

The literature review is a focused critical synthesis, organized around measurement, distribution, use, and consequences. Sources were included when their bibliographic identities could be verified and their findings addressed those concepts; only publications before December 1, 2024 were eligible. Publisher records, article abstracts, accessible full texts, and institutional repositories were consulted, with detailed numerical claims restricted to material directly inspected. This procedure supports traceability but is not an exhaustive systematic review with a registered search protocol or a complete screening flow. The review is therefore used to identify credible mechanisms, competing interpretations, and methodological cautions, rather than to estimate the pooled effect of parks on behavior or health.

3.2 Measures and operational distinctions

Parkland share, denoted P, is the reported percentage of city area classified as parkland in the archived table. Walking coverage, denoted W, is the reported percentage of residents within the ten-minute walking standard. The uncovered share is calculated as U = 100 - W. These quantities use different denominators: P refers to area, whereas W and U refer to residents. P is a land-share indicator; it is not a measure of tree cover, vegetation quality, or park acreage per resident. Consequently, dividing W by P would not produce a valid general measure of park-system efficiency. Such a ratio would also overlook ecological functions and park capacity. The study retains the measures separately and compares their

combinations, so that a city's land allocation is not mistaken for its residents' spatial opportunity.

Historical ParkScore documentation describes ten-minute access as a half-mile walking-network measure and recognizes barriers such as highways, railway lines, and rivers without crossings (Klein, 2024, Appendix A). This is more relevant to pedestrian travel than a simple circle around a park, but it still operationalizes a standardized opportunity rather than measuring every person's journey. The phrase ten-minute walk should not be interpreted as an individualized guarantee for children, wheelchair users, or people walking in difficult conditions. This article preserves the source's terminology while interpreting W as modeled proximity under a common standard. It does not claim to have independently reconstructed the network, verified every entrance, or assessed the physical accessibility of individual paths.

Parkland percentages also depend on classification and boundary decisions. Historical documentation notes exclusions affecting the city-area denominator and rules concerning water and park inventories (Klein, 2024). Those conventions make the standardized measure more useful than an unqualified total, but they prevent a simple equivalence between reported parkland share and the fraction of every acre inside a municipal boundary that a resident can use. The analysis therefore reproduces the source variable without recalculating it from unrelated municipal land totals. It also avoids converting the percentages into acres per resident, since doing so would require compatible area and population inputs. Precision in interpretation is more valuable here than generating additional quantities from mismatched denominators.

Two additional indicators describe differences in nearby park space per person: neighborhoods of color relative to white neighborhoods, and low-income neighborhoods relative to high-income neighborhoods. The table reports these as percentages more or less space, not as differences in walking coverage. Historical methodology describes space within a ten-minute walk of census block groups, comparing those with the highest concentrations of the respective populations (Klein, 2024). The published classifications are retained without reconstruction; that description supplies no numerical concentration thresholds. For interpretation, a reported difference d, positive for more and negative for less, can be expressed as the relative index $R = 1 + d/100$, where the reference group equals 1. Thus, 54% less corresponds to 0.46 of the reference amount. This transformation clarifies magnitude without creating new observations. It does not establish equality of park quality, prove that every member of a group experiences the average, or make the race and income comparisons independent of one another.

3.3 Comparison and verification

The empirical procedure uses direct transcription from the archived table, visual checking of the relevant rows and column headings, and arithmetic comparison of the reported values. Parkland percentages retain one decimal place and walking percentages retain the source's whole-number precision. This matters because the source's rounding can make small differences appear more exact than they are. Accordingly, the interpretation emphasizes large contrasts and clear discordances, while treating one- or two-point differences near the coverage ceiling cautiously. The uncovered shares are complements of rounded coverage values, not independently measured estimates. Any reported 100% is interpreted at the source's precision, without claiming that no individual resident encounters a barrier.

The principal comparisons are pairwise contrasts and a descriptive classification of municipal patterns. As a supplementary ordering check, every pair is compared on both measures; a discordance occurs when the city with more parkland share has lower walking coverage, and ties are reported separately. No causal regression is estimated: eight purposively selected observations, several close to the coverage ceiling, provide little basis for disentangling urban form, administrative boundaries, historical investment, or other explanations. Avoiding such a model sacrifices the appearance of a single explanatory coefficient but preserves the distinction between association and mechanism. A city with both a higher land share and lower walking coverage than another city provides a counterexample to simple rank equivalence; it does not prove that

parkland reduces access. The comparison is designed to establish the former claim and leaves the latter unsupported.

The analytical framework used here distinguishes four questions: how much land is allocated, how many residents are near it, how resources are distributed among neighborhoods, and whether residents can use and retain the benefits. Only the first three receive partial quantitative coverage in the available table; the fourth requires evidence beyond it. Treating that fourth question as a separate domain prevents absent evidence from being silently coded as satisfactory performance. The framework is therefore a structure for interpretation and future investigation, not a newly validated composite index. Its practical advantage is that it identifies what additional information is needed before a citywide statistic can justify a specific neighborhood intervention.

4. Comparative findings

4.1 Provision and population coverage

Table 1 presents the eight observations in a common format. The two central variables span different patterns: parkland allocation varies considerably even among cities with almost universal reported walking coverage, while some cities with broadly comparable land shares have sharply different uncovered populations. The table does not describe park quality or the causes of these differences. Its first contribution is more basic: it makes the mismatch between area-based provision and population-based proximity directly observable. Reading down one column alone would therefore answer a narrower question than the title of a comparative park assessment implies. The relevant unit of interpretation is the combination of columns, with each retaining its own meaning.

Table 1. Parkland share and walking coverage in the selected cities, 2024

City	Parkland as share of city area (%)	Residents within walking standard (%)	Calculated uncovered share (%)
Washington, DC	23.8	99	1
Minneapolis	15.0	99	1
San Francisco	19.5	100	0
New York	22.8	99	1
Chicago	10.2	98	2
Los Angeles	13.4	63	37
Houston	12.8	61	39
Phoenix	15.5	49	51

Note. Source: Trust for Public Land (2024a), archived 2024 ParkScore table. Walking coverage is the reported ten-minute (half-mile) standard. Uncovered share is calculated as 100 minus reported coverage. Area and population denominators differ; values retain the source's precision. Reported 100% does not establish universal usability.

The Minneapolis-Phoenix comparison is especially useful because the reported parkland shares are close while the access outcomes are far apart. The calculated difference in land share is 0.5 percentage points, whereas the calculated walking-coverage difference is 50 points. Similar land allocation therefore cannot, on its own, explain similar residential access in this pair. This does not identify whether the decisive mechanisms are park location, settlement pattern, network connectivity, or classification. It instead establishes a diagnostic requirement: an explanation of the pair must include spatial or institutional information beyond aggregate land share. The comparison is strong evidence against treating provision and access as substitutes, while remaining weak evidence about the individual causes of either result.

Chicago provides a second instructive counterexample to a simple acreage ordering. Within this sample it has the smallest reported parkland share, yet its walking coverage is near the upper end. Relative to Los Angeles, Chicago has 3.2 percentage points less parkland share and 35 points greater coverage. That combination is compatible with a park network that reaches many residents despite a comparatively limited area allocation, but the citywide values alone cannot establish the arrangement or adequacy of that network. In particular, extensive proximity may coincide with high demand on available spaces. The defensible interpretation is consequently twofold: modest land share does not preclude broad proximity, and broad proximity does not demonstrate sufficient capacity. A planning assessment that recognizes only the first implication would risk celebrating coverage while overlooking the amount of space available for use.

Washington, DC, and New York occupy a different position in the comparison, combining relatively high reported land shares with almost universal proximity. Their joint performance shows that the two dimensions can reinforce one another; the article's argument does not require a general trade-off between acreage and access. However, the reported combination does not reveal which residents use particular parks or whether large destinations and small neighborhood spaces perform equally well. It also does not show that another municipality could reproduce the result through a proportionate increase in acreage. These cases are best understood as evidence that extensive allocation and extensive proximity can coexist, followed by a need to investigate the distribution and usability of the resulting opportunities.

San Francisco reaches the reported coverage ceiling, which makes it an informative case for interpreting completion. Under the source's standard, there is no further citywide percentage-point improvement available beyond that ceiling. Yet this arithmetic endpoint is not an endpoint for park policy: route accessibility, crowding, maintenance, programming, and neighborhood space can still change. Nor can a rounded coverage statistic certify every individual's experience. Universal modeled proximity should therefore shift evaluation toward the conditions of use. Where the proximity objective has effectively been reached, additional investment needs to be assessed by what it improves within and around parks, and by who receives those improvements.

Los Angeles and Houston have similar reported land shares and similar walking coverage, creating a pair that initially appears more consistent with an association between provision and access. Nevertheless, two similar outcomes do not establish a common mechanism or a general relationship across the wider sample. Their uncovered shares indicate a substantial geographic service question, but the city-level table cannot identify which neighborhoods, barriers, or prospective sites should receive priority. The appropriate conclusion is to require spatial targeting before selecting projects. In these cases, a municipality-wide program can set an access objective, but its implementation needs population-weighted information about where an intervention would create an additional reachable opportunity rather than duplicate one already present.

The uncovered-share calculation changes the emphasis from comparative prestige to the scale of the remaining coverage task. Across the eight cases, the calculated range is zero to 51% at reported precision. This proportion is useful for understanding the share of residents outside the standard, but it is not an absolute count and cannot by itself establish which city has more people lacking access. A small uncovered percentage in a large city may represent a substantial population. The measure should therefore be used to compare relative coverage, with compatible population counts added in subsequent local work. This prevents the rhetorical appeal of near-universal access from obscuring the potentially significant needs of those who remain outside it.

4.2 Neighborhood park space and the limits of proximity

The neighborhood indicators in Table 2 add information that the coverage column cannot supply. They compare relative nearby park space per person across racial and income neighborhood categories, making visible a distributional dimension that is absent from an undifferentiated city total. However, their categories aggregate

diverse residents and their percentages do not measure travel time or user experience. They should therefore be read as evidence about a specific spatial distribution, not as a complete verdict on racial or economic justice. In combination with Table 1, they permit a more precise question: when a city provides widespread proximity, does it also provide comparable amounts of nearby park space across the specified neighborhood groups?

Table 2. Differences in nearby park space per person, 2024

City	Neighborhoods of color relative to white neighborhoods	Low-income neighborhoods relative to high-income neighborhoods
Washington, DC	13% more	9% more
Minneapolis	54% less	65% less
San Francisco	54% less	55% less
New York	29% less	19% less
Chicago	12% more	25% more
Los Angeles	66% less	73% less
Houston	6% more	32% less
Phoenix	49% less	58% less

Note. Source: Trust for Public Land (2024a). Values indicate the reported percentage more or less nearby park space per person in the first neighborhood category relative to its comparator. They are relative space differences, not percentage-point gaps in walking access. Neighborhood categories do not describe every individual resident.

The high-coverage cases divide when assessed through neighborhood space. Washington, DC, and Chicago report more nearby space in both of the specified comparison groups, while Minneapolis, San Francisco, and New York report less. These differences caution against treating all cities close to the coverage ceiling as equivalent. They also caution against assuming that favorable values in the two comparisons establish the absence of disadvantage within every neighborhood or for every park activity. The analytical gain lies in disaggregation itself: a common proximity outcome can contain different distributional patterns. This means that a policy aimed at closing uncovered residential areas and a policy aimed at improving space equity may require different locations, budgets, and evaluation criteria.

Converting the Minneapolis differences to relative indices gives 0.46 for neighborhoods of color and 0.35 for low-income neighborhoods, with each corresponding comparison group set to 1. The contrast with its near-universal proximity is substantively important: being within the standard distance does not mean having a comparable amount of nearby space. Yet these ratios remain neighborhood summaries, and the analysis cannot determine from them whether park use is constrained by crowding, facilities, or perceived suitability. Their role is to identify an unresolved resource disparity that proximity alone would miss. A defensible local response would investigate the affected neighborhoods and the kinds of space residents need before deciding whether expansion, redesign, or changes to access agreements would be most useful.

Los Angeles illustrates how incomplete coverage and unequal nearby space can coexist. The relative indices calculated from its two reported disparities are 0.34 and 0.27, respectively. These values indicate that the coverage problem should not be treated as merely a matter of getting every neighborhood inside a service area; the amount of opportunity within service areas also warrants attention. At the same time, aggregate ratios do not identify the households that simultaneously experience every disadvantage. The overlap between these

disadvantages needs to be examined directly. Mapping uncovered populations alongside local capacity, quality, and housing conditions would allow a subsequent study to distinguish neighborhoods needing a first reachable park from those needing more adequate provision within an already served area.

Houston shows why the two neighborhood comparisons should remain separate. Its reported racial-neighborhood space comparison is favorable to neighborhoods of color, while its income comparison is unfavorable to low-income neighborhoods. This divergence does not imply that race is irrelevant or that income explains the entire pattern, because the categories overlap and the table supplies no multivariable analysis. Instead, it demonstrates that different distributional questions can yield different answers within one municipality. A single label of equitable or inequitable would lose that information. A better assessment reports both patterns, investigates their geographic overlap, and avoids using a favorable result on one dimension to dismiss an unfavorable result on another.

4.3 What the comparison establishes

Taken together, the findings support a descriptive classification rather than a new league table. One pattern combines extensive proximity with relatively favorable neighborhood-space comparisons; another combines extensive proximity with unfavorable space comparisons; a third includes substantial uncovered shares alongside varying distributional deficits. The categories are useful for organizing diagnostic work, but their boundaries are not natural thresholds and the small sample cannot establish their prevalence. Accordingly, they should not be converted into permanent labels for cities. Their value is procedural: they show why assessment should proceed from provision to coverage and then to distribution, with further investigation of usability, instead of allowing the first successful indicator to end the inquiry.

The ordering check identifies eight discordant pairs among 25 pairs without ties, with three further pairs tied on walking coverage. Two discordances involve one-point coverage differences near the ceiling; the other six involve gaps of 12 to 50 points. This is a descriptive property of the selected cases, not an estimate for all U.S. cities. The strongest conclusion is one of non-equivalence. The observed cases rule out the proposition that ordering these cities by parkland share will necessarily order them by walking coverage, and they show that high coverage does not guarantee parity in the reported neighborhood-space measures. They do not establish that acreage is unimportant, that compact development alone explains access, or that any city has solved every form of inequity. Recognizing the distinction allows the evidence to do useful work without overreaching. The remainder of the article therefore treats urban form, management, and residential stability as explanatory and policy questions to be investigated, rather than as causal findings already demonstrated by the comparative table.

5. Interpreting the findings

5.1 Spatial organization and the meaning of provision

The comparison suggests that the spatial organization of parkland deserves at least as much attention as its aggregate amount when the policy objective is residential walking access. A given area could be concentrated in a few locations or distributed among many sites, generating different relationships with households and routes. This is a geometric possibility rather than an explanation verified for each selected city, and dispersed provision may sacrifice functions requiring continuous land. A portfolio approach would distinguish facilities intended for frequent local use from landscapes providing extensive recreation or ecological functions. A city should be able to justify each component without allowing the value of one to conceal a deficiency in the other. The comparative evidence supports that differentiation, even though selecting the appropriate local mix requires further study.

Density is a plausible influence because concentrating residents near destinations can increase population coverage without proportionately increasing park acreage. Yet the same concentration may increase potential demand on a limited area, so an explanation based on density contains an adequacy problem of its own. Furthermore, this study neither measures residential density consistently nor separates it

from municipal boundary choices and park location. The appropriate inference is consequently a hypothesis for investigation, not a finding that dense development necessarily creates better parks. A useful follow-up would ask whether a neighborhood combines short routes with adequate usable space per potential user. That question retains the potential accessibility benefits of compact settlement while making crowding and recreational choice visible as separate outcomes.

Municipal comparison also raises questions of responsibility because a city's reported park resources need not be supplied by one institution. Historical ParkScore documentation recognizes several forms of publicly accessible provision, including parks under different ownership and qualifying shared-use arrangements (Klein, 2024). Their inclusion broadens the account of resources available to residents, but an aggregate outcome cannot be attributed wholly to the current municipal government. Residents' opportunities can be evaluated at the city scale, with implementation responsibility traced at the site scale. If an access problem involves an entrance, operating agreement, or adjoining street, the relevant organization may differ from the one managing the park's interior. An assessment becomes more actionable when it connects each diagnosed barrier to an accountable institution.

5.2 Usability, environmental conditions, and continuity of benefit

Environmental conditions can affect both the need for a park and the feasibility of reaching it. Hoffman et al. (2020) documented associations between historical housing discrimination and present-day land-surface heat across U.S. urban areas. That study did not measure park walking routes, and surface temperature is not equivalent to a pedestrian's personal heat exposure. Nevertheless, it supplies a reason to question a model in which equal route length implies equal travel burden. The article's inference is that access audits should assess the conditions of the journey, particularly where environmental stress is concentrated. Such audits would complement the standardized distance measure rather than reinterpret its values as if they already captured shade, thermal comfort, or differences in vulnerability.

The health literature similarly supports evaluating the kind of experience a park makes possible. Bratman et al. (2015) examined a 90-minute nature walk and reported changes in rumination and associated neural activity, providing a possible mechanism connecting environmental experience and well-being. The small experimental sample, short exposure, and specific comparison environments do not establish citywide health effects, and the between-group interaction for self-reported rumination did not meet the conventional .05 threshold. The content and duration of experience therefore deserve attention alongside proximity, without presuming a particular health effect. The study's city indicators cannot distinguish a restorative visit from a difficult or unrewarding one. Health-oriented park planning needs evidence about those experiences before translating access improvements into expected clinical or population outcomes.

Residential stability introduces time into what is otherwise a static comparison. If residents move away from an improved area because housing becomes unaffordable, a later map may show better local provision while documenting benefits for a different population. Conversely, neighborhood demographic change cannot by itself identify involuntary displacement or attribute it to park investment. Continuity of benefit requires longitudinal research with direct evidence about households and housing conditions. For this article, the point is not to assign displacement effects to any selected city. It is to identify a blind spot in an assessment that ends when the park opens or when the access percentage rises. Public benefit includes whether intended residents retain a realistic opportunity to use the improvement over time.

5.3 A decision framework without a compensating score

An integrated assessment should require success on several distinct questions rather than allow an excellent score on one to compensate silently for failure on another. Acreage, proximity, distribution, and usability describe different obligations, and a weighted sum can hide the specific deficit requiring action. However, refusing all aggregation can make public communication unwieldy and leave decision

makers without a clear priority. A short dashboard paired with an explicit diagnostic statement can meet that communication need. A city might report that proximity is extensive but nearby space is unequally distributed, or that provision exists but many residents remain outside the walking standard. This retains clear communication while ensuring that the recommended response follows the observed problem instead of an opaque total score.

6. Planning and policy implications

6.1 Match interventions to the observed deficit

Where substantial residential populations remain outside the walking standard, the first planning task is to identify locations in which an intervention would add a reachable opportunity for currently uncovered residents. New neighborhood parks are one possibility, but an additional entrance or a formal public-use agreement may alter coverage without acquiring an entirely new site. None of these options should be assumed feasible from a citywide percentage. The proposed decision rule is to estimate the additional population served by each candidate intervention and then inspect its practical conditions. A project that is attractive in acreage terms may add little residential coverage, while a modest project may close an important gap. Both may still be worthwhile, provided that their different objectives and expected contributions are made explicit.

Where parks exist nearby but routes are indirect or inaccessible, connectivity becomes the appropriate object of investment. A crossing, path connection, entrance redesign, or accessible surface could change the relationship between a park and surrounding households. Yet a mapped shortcut is not necessarily a safe or acceptable route, and a new opening can require maintenance, operating arrangements, and coordination beyond the park boundary. The whole journey should therefore be evaluated with affected residents before a network change is recorded as a completed access improvement. The outcome should be a feasible route to a useful destination at relevant times. This is a proposed implementation standard, not evidence that any specific barrier explains the selected cities' published coverage gaps.

Where proximity is already extensive but nearby space is distributed unequally, the marginal benefit of another nominally accessible site depends on capacity and function. Expanding a heavily demanded park, acquiring adjacent land, or redistributing activities across nearby facilities may address a problem that another small service area would leave unresolved. Conversely, expansion may be impractical or may fail to serve activities residents actually want. Information on potential demand should guide observation and consultation about unmet needs. Nearby space per person can identify an area for investigation; it should not dictate a universal design. The intended improvement should be specified in terms such as usable play area, room for informal recreation, or reliable access to a desired facility.

Operational quality deserves a separate budget commitment because a capital project can improve the inventory while leaving day-to-day service uncertain. Inspection, maintenance, staffing, repair, and predictable opening arrangements determine whether a facility remains available after construction. However, simply increasing expenditures does not establish that residents receive better service, and the comparison contains no local cost-effectiveness estimates. Operational spending should therefore be connected to observable commitments: facilities functioning when scheduled, reported problems resolved, and activities available to intended users. These commitments give a more direct account of service than expenditure alone. They also allow an evaluation to distinguish a park that lacks a necessary facility from one that possesses the facility but fails to keep it usable.

6.2 Make equity objectives and trade-offs explicit

Resource allocation should state whether its immediate objective is to reduce the uncovered population, improve opportunities for those facing greatest disadvantage, or provide a function absent from the existing system. Those objectives can support different projects. For example, a hypothetical site serving many already advantaged but uncovered residents might improve citywide coverage more than a project benefiting fewer residents with severe mobility barriers. A single maximization rule cannot resolve that normative choice. A transparent decision record can report

expected coverage gains alongside distributional and usability consequences. Public deliberation can then address the trade-off directly, rather than allowing it to disappear inside a scoring weight. This preserves quantitative evidence while recognizing that allocating public land also involves judgments about need.

School grounds and other shared facilities may extend the set of public opportunities, but their contribution depends on the terms of actual access. A formally documented arrangement can make previously restricted space available, whereas nominal inclusion without predictable hours may overstate the service residents receive. The policy implication is to treat access agreements as operational commitments specifying times, entrances, permitted activities, maintenance responsibilities, and the means of reporting problems. Their adequacy should then be tested from the perspective of potential users. This approach recognizes the value of partnerships without presuming that every institutional open space functions as a public park. It also produces information that a future inventory can use to distinguish dependable provision from conditional or intermittent availability.

Housing stability should be considered when park investment is expected to accompany wider neighborhood change. Possible responses include coordinating public-space planning with affordable-housing preservation and tracking whether existing residents can remain nearby; the suitable instruments depend on local evidence and institutional capacity. The comparison does not establish that a particular intervention would prevent displacement, and demographic change alone cannot identify its cause. Joint planning and longitudinal evaluation can address these uncertainties while allowing locally appropriate policy choices. An investment intended to repair unequal opportunity should define its beneficiary population at the outset and examine whether that population can obtain the benefits later. This creates an evaluative link between environmental improvement and the people it is intended to serve.

6.3 Evaluate projects against their stated purpose

A useful evaluation begins before construction with a theory of what the project is expected to change. If the project adds an entrance, its immediate outcome is a change in feasible routes; if it adds facilities, its outcome concerns available activities; if it changes programming, participation becomes central. Each can have further consequences, but those consequences should not be presumed from the first successful step. Evaluation should follow the sequence from implementation through practical availability to use and the distribution of benefit. Comparison sites or phased introduction can strengthen causal assessment where feasible. Even when such designs are unavailable, clearly distinguishing these outcomes prevents a completed construction contract from being treated as sufficient evidence of improved access or well-being.

The comparative findings suggest different starting questions for different cities, while stopping short of prescribing individual projects. In Phoenix, Los Angeles, and Houston, the relatively large uncovered shares make the location of missing residential opportunities an immediate concern. In Minneapolis, San Francisco, and New York, extensive proximity alongside unfavorable neighborhood-space comparisons makes adequacy and distribution particularly important to investigate. Washington, DC, and Chicago still require evidence on usability despite their favorable reported space comparisons. These are diagnostic priorities derived from the tables, not comprehensive judgments about current policies. Their value is to direct the next inquiry toward the information a city lacks, while allowing local evidence to revise the priority before funds are committed.

7. Limitations and research priorities

The first limitation is the study's dependence on published aggregate indicators. A shared source improves consistency, but it also means that inventory omissions, population estimation, classification choices, and network assumptions may affect all comparisons. The analysis verified transcription and arithmetic; it did not independently validate the geographic database. The appropriate response is to distinguish reproducibility of the reported comparison from validation of its underlying measurements. A subsequent study should retain versioned park boundaries, entrance locations, pedestrian routes,

and population inputs so that its results can be reconstructed. Without that record, an apparent change in access over time may reflect a data correction as well as a physical improvement, and the two should not be conflated.

A second limitation concerns scope and inference. The sample was selected to reveal contrasts, and its municipal units vary in ways the study does not control. These choices prevent national generalization and causal attribution, but they do not invalidate the observed counterexamples to metric equivalence. The next stage should test the proposed relationships across a broader set of cities using compatible contextual information and carefully defined hypotheses. It should also examine whether conclusions change under metropolitan or neighborhood boundaries. Such extensions would move from illustrative comparison toward explanation, provided that they preserve the distinction between an administrative reporting unit and the spatial environment relevant to individual residents.

A third limitation is the absence of direct evidence on route conditions, actual use, and user experience in the selected cities. Published literature identifies reasons these dimensions may matter, but it cannot supply missing observations for the present cases. Future work should combine local audits with interviews involving both park users and nonusers, including residents who encounter mobility or scheduling barriers. Threshold sensitivity analysis could compare shorter and longer catchments without implying that one distance suits every purpose. These methods have different roles: geographic models identify possible opportunities, observation assesses behavior and conditions, and residents' accounts help explain how those opportunities are experienced or avoided.

Finally, the study cannot establish whether changes in provision produce lasting improvements for disadvantaged residents. Cross-sectional neighborhood space ratios describe a distribution at one reporting point; they do not follow households or observe the effects of a park intervention. A stronger design would measure conditions before and after a defined change, use credible comparison conditions where possible, and track both local outcomes and residential continuity. Its challenge would be to distinguish the park's contribution from other simultaneous investments and neighborhood changes. This limitation does not weaken the case for addressing identified deficits. It establishes what evaluation must add before a claim about improved coverage becomes a claim about durable social or health benefit.

8. Conclusion

The selected cities demonstrate that parkland provision and walking access are distinct achievements. Similar land shares can coexist with sharply different coverage, and extensive proximity can coexist with substantial neighborhood differences in nearby space. These are descriptive findings within a purposive comparison, not evidence that one urban form or governance model universally produces better outcomes. Their practical significance is that an assessment organized around acreage or proximity alone can misidentify the remaining task. Evaluating the measures together allows a city to distinguish insufficient residential reach from unequal nearby space and possible capacity deficits, and to identify where further evidence about usability is essential.

The resulting policy approach is to match interventions to diagnosed conditions while preserving the different purposes parks serve. Acquisition, connections, accessible entrances, expansion, management, and public-use agreements can address different barriers, but their effectiveness depends on local circumstances that a citywide table cannot resolve. A defensible investment process therefore specifies the intended beneficiaries, the opportunity being improved, the conditions needed for use, and the outcome by which success will be judged. This makes comparative measurement a starting point for accountable decisions rather than a substitute for local investigation.

Adequate park provision ultimately concerns the relationship between land and people's continuing opportunities. The evidence reviewed supports attention to that relationship, while its methodological limits prevent a claim that every additional acre or every higher coverage percentage yields the same benefit. The assessment therefore supports a standard with several distinct obligations: protect sufficient

public space, locate and connect it so residents can reach it, examine how its resources are distributed, and verify whether intended users can benefit over time. That standard retains the clarity of comparative indicators while giving planning a more substantive objective than improving a rank.

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