

Assessing the ‘15 Minute City’ Vision in Strategic Plans of Cities in Poland

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Abstract

The aim of this article is to examine the provisions of the Polish “Big Five” Urban Development Strategies with respect to their incorporation of the 15-minute city assumptions. In all the cases examined, the documents clearly reference the 15-minute city assumptions in various aspects and to varying degrees. The analyses conducted indicate the significant value of the spatial regulations of the strategies under review, which included actions aimed at limiting urban sprawl, diversifying functions, and improving broadly understood access to space and resources. Collectively, the strategies address climate change (air, water, climate protection), tourism development, cultural heritage, and maintaining (and improving) the quality of life. The embedded planning strategies emphasize growing land-use conflicts and intense development pressure.

Keywords: 15-minute city; accessibility; Poland; neighborhood planning; urban planning; walking access

1. Introduction

In recent years, cities have adopted various strategies to address vehicle dependence and automobile congestion. One of these strategies is the ‘15-minute city’ concept, which promotes dense urban places that take advantage of connectivity, proximity, mixed-use development, and human-scale design. The 15-minute city approach is aimed at improving the quality of life in neighborhoods by de-centering the automobile while nurturing mixed-use neighborhoods, facilitating walkability, and supporting urban sustainability.

At their core, 15-minute cities emphasize pedestrian-centered urbanism (Weng et al., 2019) and ensure that walking is effective for carrying out daily activities and meeting household needs (Abdelfattah, Deponte, & Fossa, 2022). Consequently, 15-minute cities rely on a fundamental premise: everyone should be able to reach daily necessities on foot within 15-minutes of home. From their homes, residents should be able to walk to shops and service outlets, workplaces, and schools. They should also be able to access inviting public places, parks and green areas, and playgrounds. To meet these aims, 15-minute cities should stress ‘proximity, diversity, density and ubiquity’ (Moreno et al. 2021; Moreno, 2021). Priority is placed on walking for daily functions, and there should be little need to travel long distances for routine daily needs.

In this article, we explore how 15 minute city principles have been filtered into Development Strategy for the City. The aim is to explore the extent to which official city planning documents guide the built form of cities toward access, proximity, and walkability that are reflected in 15 minute city doctrine. We hope to shed light on the possibilities for 15-minute city planning in comprehensive city development strategies.

We locate this study in Poland (2022 population 38,036,000) which shares its eastern border with Belarus, Russia, and Ukraine and western and southern borders with Czechia, Germany, Slovakia (the Baltic Sea is to the North, and Poland shares a border to the northeast with Lithuania). Situated in Central Europe, Poland is outside the main area of European activity – centered in France – for implementation of 15 minute cities. Based on P. Śleszyński’s (2018) study, the cities with the highest degree of “centrality” in Poland were selected for analysis: the so-called “Big Five” cities: Warsaw, Kraków, Wrocław, Poznań, and the Tricity area (Gdańsk, Gdynia, and Sopot).

2. Access, a Core Tenet of 15 Minute Cities

The contemporary 15-minute city concept was first proposed by urbanist Carlos Moreno in 2016 and given renewed attention during the COVID-19 pandemic when walkable amenities were expanded and tested in practice thanks to quarantine and movement restrictions (Moreno et al., 2021). Although the COVID-19 pandemic produced a global crisis, it redirected attention to the neighborhood scale both for individual citizens and residents and for people tasked with planning and managing neighborhoods and communities.

The 15-minute city concept is descended from previous urban planning aims including Utopian Garden Cities promoted by Ebenezer Howard as dispersed compact centers in urban greenbelts. Since the time that Garden Cities were tested in theory and practice, various urban scholars – including Jane Jacobs (Jacobs, 1961; Row, 1962), Jan Gehl (Gehl, 2011), and David Sim (Sim, 2019) – have written persuasively about the many benefits of access, proximity, and community. Following 15 minute city principles, places can become more sustainable, inclusive, and livable, enhancing both social engagement and accessibility for all residents.

Moving farther back in history in town planning scholarship and practice during the 20th century, Ebenezer Howard (Howard, 1902) promoted utopian Garden Cities as dispersed and interconnected compact centers in the greenbelts

surrounding towns in England. Howard's Garden Cities were specifically intended to enhance public health through design and create social spaces to support the lives of inhabitants. Clarence Perry (Arthur, 1939) adapted Howard's model to suburban United States settings and proposed a 'neighborhood unit' plan focused on local schools and key amenities linked by walkable environments. Howard's conceptual model and built works – such as Letchworth in the United Kingdom – were conceptualized before automobiles were mass produced and stressed convenient walkability from all origins to all destinations, while Perry's work included automobiles in neighborhood plans but stressed walkability in residential space (Hall, 2014).

In the contemporary incarnation, 15 minute cities are envisioned to promote pedestrian friendliness amid mixed-use development, combining housing, services, and recreation to reduce the need for long commutes. Walking and bicycling are emphasized, ensuring daily activities are within a reasonable walk or bicycle ride. Public transport is integrated to connect neighborhoods and reduce automobile traffic, while ample greenery and public spaces enhance residents' quality of life. By reducing automobile dependency and discouraging automobile ownership, carbon emissions may lessen, helping cities address climate change and become compliant with the Paris agreement and promote efficient use of resources while creating more livable places (Gota et al., 2019).

3. The history of the approach to standardization aimed at improving the quality of life in the city

Most Polish cities include a historic core, usually dating from Medieval times, when residents relied on walking and horse carts. Ensuing phases of development, including neighborhoods of tenement apartment buildings, surround the core. Most apartment buildings were 3 to 4 stories in height, until elevators were introduced (in the late 19th century) allowing the construction of apartment houses, including luxury buildings (known in Poland as "kamienice") exceeding four stories. During the interwar period, with the widespread use of electric elevators, apartment buildings were typically 5 to 7 stories (Lis, 2011).

After World War II, when Poland was under the sphere of influence of the USSR, pre-fabricated housing blocks relied on elevators to reach the high densities required for new housing districts intended to support industrial development (Korzeniewski, 1980; Baum, 2023). These modernist housing estates including embedded services (Szafrńska, 2016). The availability (and location) of services and greenspace was normalized by distance from residential areas, number of number of people for whom the facility is intended, and size in relation to the number of residents (Dz. Bud. Nr 2 z 02.02.1974 r., poz. 2.; Leetmaa, Hess, 2019). During the post-World War II period, urbanization in Poland reflected its membership in the Warsaw Pact, until 1991 when Poland regained its independence.

In the early 1950s, new urban planning norms included design principles related to residential, social, and service infrastructure. The basic unit of the structure of urban residential areas was the elementary school. It was accompanied, according to the needs of the population served, by a program of other basic services (Chmielewski & Mirecka, 2001). Housing estates from the 1950s to early 1970s were more compact in scale (Szafrńska, 2016). In the 1960s, austerity budgets required significant intensification of residential development in housing estates, resulting in larger apartment buildings. Mostly cooperative apartment buildings were built in the 1960s, and the late modernism aesthetics of the 1970s and 1980s featured expansive 'block housing' constructed from pre-fabricated elements. These standardized apartment buildings would result in the densest places, with residential density of 15,000 to 20,000 people per square kilometre (Szagała et al., 2024).

In Poland, socialist-era architects responsible for city planning took inspiration from the modernist movement in establishing structural housing units, intended to anchor small, self-sufficient neighbourhoods where essential services like schools, kindergartens, stores, and social services were located within walking distance (500 to 800 meters) to encourage cohesive community living. To minimize the impact of vehicular traffic, these neighbourhoods were designed to have interior local traffic and major roads at the perimeter¹. Automobile ownership was notoriously low during the years of state socialism (Hess, Tammaru, & Ham, 2018), and urban norms required proximity to daily services (kindergartens, schools, local shops, healthcare clinics, and socialization and entertainment opportunities) within 300, 500, and 800 meters of residences (Korzeniewski, 1980).

Several factors in combination – compact neighbourhood design, high residential densities (Szagała et al., 2024), walkable design – create urban neighbourhoods in Poland that are highly walkable today (see Figure 1). This means that the principles of 15 minute cities are highly achievable in Polish cities nearly everywhere except peripheral suburbs that have grown since 1991 with fragmented development.



Fig. 1. Nowa Huta, Kazimierzowskie Estate. Kazimierzowskie Postcard from 1969. Source: Dawny Kraków – zegar przeszłości: <https://www.facebook.com/groups/389963933680452/>

Fig. 2. The housing estate at Grunwaldzki Square, Wrocław. Fot. P. Michalak, source: https://www.bryla.pl/bryla/56,85301,10035507,Polskie_blokowiska__ktore_musisz_zobaczyc.html License: CC BY-SA (<https://creativecommons.org/licenses/by-sa/4.0>)

A large share of residents of cities in Central and Eastern Europe typically live in socialist-era housing estates (Hess et al., 2018a,b), and 24 percent of Kraków's housing is in planned residential districts (Łabuz & Hess, 2025).

4. 15 Minute Cities in Poland

There is great potential in Poland for implementing 15 minute cities in practice, by adjusting town planning schemes to leverage proximity, increase urban densities, emphasize walking and de-emphasize automobility, and promote local businesses. There has also been interest among scholars and researchers in assessing places in Poland for alignment with 15 minute city principles. Researchers have confirmed that there is renewed energy since the COVID-19 pandemic for promoting walkability and neighbourhood vitality (Szmytkowska, 2020). Other research have developed community audit instruments and surveys and performed spatial analyses to assess access and walkability (Chyliński, 2021). A pan-European study found Wrocław to have the highest 15-minute accessibility in Poland, significantly more walkable than the next most accessible Polish city (Bartokas-Tsiompras & Bakogiannis, 2023) in Warsaw found the most accessible places in central parts of city, along main arterial roads, and in modernist housing estates and the least accessible places in industrial areas, poorly lit places, and where barriers (such as fences) reduce walkability (Sitnik, 2024). Beyond the apparatus of official town planning activities, some communities have seen grassroots activity and tactical urbanism to improve walkability and local access.

¹ Places with reasonable urban density and people-centered street design have the highest rates of walking and cycling (Millard-Ball et al. 2025).

Fig. 3. Pedestrians and bicyclists share road space at the intersection of Mickiewicz and Kościuszki Avenues in Łódź, Poland. Source: Image taken by Ixtlilto on 05 November 2013, Creative Commons Attribution – Share Alike 3.0 Unported via Wikimedia Commons Image License: <https://creativecommons.org/licenses/by-sa/3.0/deed.en>

Fig. 4. Pedestrians and bicyclists share road space at the Mogiłskie Roundabout in Kraków, Poland. Fot.: A. Ciepiela 2025



In a previous study of access in Kraków, Poland, Noworól and his team found local accessibility adhering to the principles of the 15-minute city near the center and in socialist-era housing estates, including Nowa Huta, a self-sufficient industrial town on the east edge of the Kraków metropolitan region expanded in the 1960s to support the Lenin Steelworks (Stenning, 2000). Outside the city center and Nowa Huta, however, accessibility levels did not reach the 15-minute city. While 15-minute city access was detected in housing estates, newer apartment buildings and residential districts were more problematic: “most big socialist-modernist estates, which went underappreciated after 1990, turned out to be fairly well equipped with a variety of basic services, even though some still require upgrading. New residential areas built after 1989, as a rule, fail to meet the principles of 15-minute cities” (Noworól et al., 2022).

Łabuz and Hess (2025) investigate 15-minute city principles in 24 socialist-era housing estates in Kraków, Poland and find that most housing estates meet over 87% of criteria for 15-minute access to 8 categories of essential daily services including healthcare, local shops, public transport, and parks. As walking duration decreases, accessibility scores fall, with an average quality index dropping to 80% for 10 minutes and 59% for 5 minutes. Łabuz and Hess employ an improved method for network analysis. Findings from Łabuz and Hess (2025) and Noworól et al. (2022) concur that housing estates from the era of socialist realism generally offer remarkably high levels of accessibility to neighbourhood amenities (Szagała et al., 2024)².

5. Data and Methods

This article presents research aimed at identifying provisions in strategic planning documents relating to the 15-minute city concept, with particular emphasis on accessibility. Due to the issue of urban sprawl, which is particularly evident in large cities, the study focused on the Polish “Big Five” according to the publication “Poland of Medium-Sized Cities. Assumptions and Concept of Deglomeration in Poland” (Śleszyński, 2018): Warsaw (the capital), Krakow, Poznań, the Tricity area (Gdańsk, Gdynia and Sopot) and Wrocław. The selected metropolitan areas illustrate the diversity of Poland’s metropolises through their varying sizes and unique geographical, historical, and socio-economic backgrounds. Moreover, due to the vast area and diverse spatial structure, accessibility issues are much more complex here than in smaller centers. We access the most recent official strategic urban planning reports for these places. We choose development strategies because the strategies guide city programs and priorities and have an effect on the socio-economic and spatial development of cities. The oldest strategy (Poznan) was adopted in 2017 and the rest of the strategies were adopted in the following years. All of the development strategies were prepared and/or adopted within the last decade, and this ‘currency’ of strategic planning efforts is commendable.

² A study comparing access in various cities in Europe by service type found that walkability to food stores in Kraków did not, on average, achieve access principles of the 15-minute city (Bartzokas-Tsiompras, Bakogiannis, 2023).

All of these documents are publicly available online at the city's websites for municipal services. The development strategy for Warsaw is available in English. All other plans are available originally in Polish; we translated Polish documents to English so that we could analyze and compare plans in a common language. We next perform content analysis to assess the presence of language (explicitly and implicitly) related to 15 minute cities. The development strategies were examined in reference of four operationalized dimensions of 15-Minute city principles (see Table 2):

- ▶ Density – Functional density of people and (mixed-use) buildings, concentrating a diversity of services, amenities, and opportunities within neighborhoods. Supports vibrant streets and economic vitality;
- ▶ Proximity – Urban functions should be distributed locally, fostering social bonds, neighborhood cohesion, shared spaces, and informal interactions.
- ▶ Diversity – People of various backgrounds, ages, and income levels should be able to access a multiplicity of uses, people, services, and experiences within a compact urban environment.
- ▶ Digitization – Services should be distributed equitably and accessed remotely, reducing the need to travel long distances, facilitating a decentralized, flexible, and efficient urban life.

We have identified a few limitations in our research plan. Our method focuses on expert assessment of development strategies. Most are strategic plans written at a higher level and are not focused on implementation or activation. Future efforts on this topic could also interview town planning officials to gain insights from practice about how 15-minute city concepts are included in planning efforts. While many documents cover strategies for sustainable planning and the promotion and maintenance of urban green spaces, this article focuses primarily on 15-minute access to various city functions. Sustainable development and planning of green spaces (and access to green spaces) are part of the 15-minute cities concept and as such are included in this article.

6. Analysis of Strategies

Most of the analysed strategies declare a transition from a monocentric to a polycentric model. (see Table 1) The aim is to transform urban areas into “cities of proximity” or “15-minute cities”. These strategies assume abandoning the monocentric model in favour of a multi-nodal structure in which the basic needs of residents are met within the immediate vicinity of their place of residence. The issue of polycentricity and the creation of local service centres appears to remain one of the pillars of contemporary strategic planning in the largest Polish cities (Szymańska, Szafrńska, Korolko, 2024). The analysis of strategic documents of Gdańsk, Gdynia, Kraków, Poznań, Sopot, Warsaw, and Wrocław allows for the identification of differences in approaches to the integration of urban functions.

Table 1. Alignment of Strategic Plans in Poland's Largest Cities with 15-Minute City Principles

City Title of Development Strategy (year)	Operationalized Dimensions of 15-Minute City Principles			
	Density	Proximity	Diversity	Digitization
	Functional density of people and (mixed-use) buildings, concentrating a diversity of services, amenities, and opportunities within neighborhoods. Supports vibrant streets and economic vitality.	Urban functions should be distributed locally, fostering social bonds, neighborhood cohesion, shared spaces, and informal interactions.	People of various backgrounds, ages, and income levels should be able to access a multiplicity of uses, people, services, and experiences within a compact urban environment.	Services should be distributed equitably and accessed remotely, reducing the need to travel long distances, facilitating a decentralized, flexible, and efficient urban life.
Warsaw, Poland #Warsaw 2030 Strategy (2018), 66 pages	The strategy promotes 'a compact city with polycentric and hierarchical functional and spatial structures comprised of a network of district and sub-district centers rendering a range of services. Through introducing changes that preserve the district-specific character, Warsaw will become a compact metropolis, full of resident-friendly and activity-fostering spaces. (City of Warsaw 2018, p. 29).	In support of the operational objective 'we use services close to one's home' (p. 30), 'increased access to local services will reduce the need to commute to other regions of the City, which will give residents more free time to strengthen social relations' (City of Warsaw 2018, p. 29).	Better access to local activity centers (Objective 2.2.) will foster joint actions and engagement in the City's affairs (City of Warsaw 2018, p. 23). In support of the operational objective: 'we spend time actively in our neighborhood,' the strategy proposes to 'increase access to attractive and friendly spaces intended for cultural, educational, sports, recreational, and other forms of leisure activities, close to one's place of residence' (City of Warsaw 2018, p. 28).	To support the innovation 'we are going to ensure the conditions for creating, testing and developing business, scientific, artistic and social ideas, based on cooperation between various organizations and institutions' (City of Warsaw 2018, p. 46). Furthermore, 'an open information policy will contribute to the acquisition of knowledge on resources and enable access to open data that will prove useful in the process of developing innovative solutions' (City of Warsaw 2018, p. 46).
Kraków, Poland Kraków Development Strategy (2030– 2050): 'I Want to Live Here' (2024), 111 pages	The strategy argues that 'an understanding of a compact city is very much needed in Krakow today' (City of Kraków, 2024, p. 26) however density is approached cautiously: 'as a result of revitalization or actions aimed at increasing building density, special attention should be paid to the need to limit its negative social effects' (City of Kraków, 2024, p. 66).	In Kraków, polycentricity is depicted as a challenge to the value 'the future of man should be safe and fair' (City of Kraków 2024, p. 9): 'polycentricity of the functional and spatial structure of Krakow, as a 'city of many cities', which is related to: preserving the specificity of districts and housing estates based on material heritage and intangible; ensuring better access to public services within a short distance (e.g. 15 minutes) and/or using public transport; creating and/or strengthening the system of public spaces in connection with objects of material heritage and green areas' (City of Kraków, 2024, p. 9).	The aim 'high quality of life for residents realized by high (the highest possible) quality of public services and their universal availability' (City of Kraków, 2024, p. 17) can be addressed with 'categorization of basic public services and identification – with the participation of residents, district councils and non-governmental organizations – in the scope of the assumed 15-minute availability of basic public services on the scale of districts and housing estates' (City of Kraków, 2024, p. 17). Walkability is emphasized in the strategy: 'restoring public spaces to residents by limiting the access of private cars to the city center' (City of Kraków, 2024, p. 27).	Enhanced information technology is central to the plan: 'continuous monitoring by the local government of phenomena and processes taking place in the city and KOM, combined with a cyclical evaluation system. Facilitating access to data on the city and the metropolitan and functional area and improving the quality of public information provided' (City of Kraków, 2024, p. 28).

Wrocław, Poland Wrocław Strategy 2030 (2021), p.70	The aim for a friendly and accessible city includes these statements: 'se want to implement the actions included in it in all parts of the city. We also want the values proposed here – solidarity, creativity, quality of life, ecology – to apply to as many areas of life as possible. Wrocław is to be a friendly and accessible city – including for seniors, people with disabilities and children. Public services and the offer of public institutions should be as cheap as possible. High prices cannot be a barrier preventing participation in culture or using city attractions (City of Wrocław 2021, p. 9).	Neighborhood centers support surrounding residential density: 'we focus on polycentricity. A city of many well-connected and internally compact, multifunctional districts and estates' (City of Wrocław 2021, p. 9).	The priority 'to create an open city' includes the aim 'let's support walking, cycling and water recreation in the Wrocław agglomeration (City of Wrocław 2021, p. 45).	The priority 'to create an open city' includes the aim 'let's share publicly city data – especially electronically, both as raw data and in forms friendly to ordinary internet users' (City of Wrocław 2021, p. 45). The priority to improve governance includes the aim 'let's increase residents' participation in city management' (City of Wrocław 2021, p. 46).
Poznań, Poland 'The Strategy for Development of the City of Poznan 2020+ (2017)	The strategic goal is to 'improve the quality of life of all residents and the importance of Poznań on the international stage'. The strategy states that this goal will be achieved by 'developing metropolitan solutions that prove Poznań is a "green," eco-mobile city with easily accessible green areas for all residents and environmentally friendly, sustainable transportation. This ensures a high quality of life for residents within designated areas that primarily serve residential functions and include activities that engage residents'. (City of Poznań 2017, pp. 16-18).	The city of Poznań has a historically shaped urban layout that includes several markets and local centres. The aims of the Strategy include: "a sense of identity in Poznań's housing estates, as well as the definition of Poznań as a family- and senior-friendly city, and "supporting the development of local government at the executive level, undertaken grassroots initiatives". The need to conduct local interventions evenly across the city was also identified. With respect to the immediate neighbourhoods – housing estates – priority actions address issues related to ensuring high-quality local cultural, sports and recreational, social, and educational services in the housing estates. A high-quality, comprehensive range of social, basic, sports and recreational, and cultural services is available locally. (City of Poznan 2017, pp. 28–32)	Community and social dialogue are key elements of the Strategy. Poznań, as a city co-decided by its residents, places great emphasis on social dialogue and engaging people from vulnerable groups and those facing difficult life situations. The City Council and Neighbourhood Councils play an important role in this process. The city is leveraging its social capital to implement new social initiatives that improve the quality of life and safety of residents. The city's priority is integrating local communities based on direct interpersonal, intercultural, and interenvironmental relationships, as well as consistent social policies of solidarity, unity, and tolerance'. Local actions such as 'Increasing Resident Participation in City Life' and 'Supporting Cultural and Sporting Activities for Social Development' are implemented by activating residents, expanding the city's leisure activities, and 'initiating and supporting projects that use culture and sports to build a local network of trust and public dialogue (binding social capital) that is artistic and engaging'. (City of Poznan 2017, pp. 26, 33–34)	'Smart solutions are used in all areas of life, as well as in business and city management. The city provides public services based on a relational model supported by IT systems focused on collaboration with residents and businesses. Residents benefit from a wide range of electronic public services in local administration and e-consultation tools, while businesses benefit from the e-platform for public procurement, in which the city applies social and environmental clauses. The introduced possibility of 24/7 interactive communication with customers allows for easier access to information and shortened processing times. The city fully makes public information available online. Open data becomes the basis for creating applications that facilitate urban life. Poznań has a free platform that leverages the broad capabilities of the internet, enabling communication not only between people but also between various devices (the Internet of Things). It provides access to information and services and individual control over the use of technical media at home. The entire city area is covered by broadband internet'. (City of Poznan 2017, p. 26–27)

Gdańsk, Poland Gdańsk 2030 Plus Development Strategy (2022)	The city's structure is polycentric. The Strategy places great emphasis on equal access to green spaces and services in the immediate vicinity. This is reflected, among others, in the provisions defining the purpose: "Balancing spatial structures and shaping sustainable mobility", which is to be implemented through: "the development of lower-ranking service centres that emphasize and complement the polycentric structure of the city, the intensification of development and development of the central service area (CPU) and the designated downtown development zone, and the limitation of urban development in the Żuławy region within Gdańsk's city limits". (15-min city) (City of Gdańsk 2022, pp. 130–131).	The need to create a new local centre in a developing part of the city was identified. The strategy also outlined the need to raise residents' living standards by improving the quality, attractiveness, and accessibility of public spaces and creating local spaces. It also outlined the need to "continue the city's inward development by infilling existing urban structures and creating a so-called short-distance city" – based on a 15-minute walking distance. The Strategy's provisions direct the city's development as a polycentric centre. (City of Gdańsk 2022, pp. 130–132).	The Strategy aims to establish Gdańsk as a 'common city'. There is a strong emphasis on 'social development, preventing depopulation, and protecting cultural heritage and identity. This is achieved by 'improving the quality of life in the developing southern part of the city through the creation of a new district centre. The "Green City" goal aims to raise the living standards of residents by increasing access to green spaces. The plan to develop public transportation infrastructure and bicycle paths is also noteworthy. Regarding spatial policy and developing local service centres, these provisions align with the city's 15-minute requirements'. (City of Gdańsk 2022, pp.130-131).	Gdańsk pursues an open data policy, emphasizing the need to present information about the city reliably and in the most complete form possible. 'The openness of the project selection process, their prioritization, and transparent and clear selection criteria are the foundation of an open city. The project implementation process itself should be equally open and inclusive within the Strategy. Access to information and collaboration complement the open nature of the project creation and implementation process'. (City of Gdańsk 2022, pp. 130–131).
Gdynia, Poland Strategy for the Development of Gdynia City 2030 (2016)	The city vision presented in the Strategy defines Gdynia as: 'a clean and green city, implementing the idea of sustainable development, achieving the highest parameters of water and air quality', 'a city with orderly and coherent urban planning, with well-maintained public spaces for residents and guests' and, above all, as 'a sustainable city, skilfully developing the centre, its outskirts, and the more distant districts', which is in line with the assumptions of the 15-minute city. (City of Gdynia 2016, pp. 18–41).	The Strategy defines good access to public services for residents of each of Gdynia's districts as essential. The importance of small-scale trade and local services was also emphasized, as well as the need to reduce car traffic and plan strategic, pro-ecological investments that would improve residents' quality of life. These objectives are reflected in the goals set out in the strategy. Among other things, the need to 'shape a compact urban space with diverse functions that would complement residential districts with workplaces, services, green spaces, and recreational facilities' was defined with reference to public space. – Importantly, it was emphasized that public spaces are to accompany small, local service centres, taking into account priority pedestrian and bicycle traffic. (City of Gdynia 2016, pp. 41–49).	The role and importance of small services, both basic and specialized, including healthcare, were emphasized, and defined as being equally accessible locally. This assumption was incorporated into the priority objective: 'Friendly public space in Gdynia's districts'. Therefore, actions are required aimed at 'shaping a compact urban space with diversified functions, which would aim to complement the residential development of districts with workplaces, services, greenery and facilities for everyday recreation.' (City of Gdynia 2016, p.21).	The city of Gdynia has an open data access policy. Information on spatial planning, culture, sports, and more is offered on city websites, which are organized into thematic sections. The Strategy also outlines the need to build a 'modern system of personalized communication with residents.' Furthermore, it contains plans to activate the innovative potential of Gdynia's economy and science sector by piloting the implementation of locally developed technological solutions in the city's public services sector. (City of Gdynia 2016, pp. 53, 57).

Sopot, Poland Development Strategy for the City of Sopot, 2022–2030 (2022), 52 pages	A recommended principle is ‘protection of building compactness’ explained as follows: ‘the plan promotes implementation of 15-minute city planning while maintaining or strengthening local facilities and service centers (striving for a 600-metre service area, corresponding to a 10-minute walk)’ (City of Sopot 2022, p. 39).	The aspirational urban structure is aligned with 15-minute city principles: ‘basic service facilities (schools, kindergartens, health centers, shops, public transport hubs, etc.) are located adequately to the emerging demand’ (City of Sopot 2022, p. 15).	The urban structure should be aligned with 15-minute city principles: ‘the developed urban layout of Sopot well implements the idea of a ‘15-minute city’, i.e. a city in which access to basic public and commercial services and a significant number of jobs is provided within a 15-minute walking distance from the place of residence’ (City of Sopot 2022, p. 15). Access and mobility should be enhanced in compact 15-minute cities ‘in which walking, cycling (individual active mobility) and public transport have priority over car traffic’ (City of Sopot 2022, p. 22).	The digital competencies of residents should be supported and digital infrastructure should be enhanced: ‘to fully utilize the potential of technological development and improve quality and attractiveness of city life, Sopot should ‘invest’ in the digital competences of all residents and digitize every public service (also for visitors). It is also extremely important to create friendly conditions for people and companies wishing to develop their activities based on unrestricted access to high-quality digital infrastructure, open public data and digital competences of the local community’ (City of Sopot 2022, p. 21).
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7. Results and Discussion

7.1. Polycentricity and Local Service Centres

Kraków explicitly uses the term “a city of many cities” in its strategy and plans a network of 27 district centres intended to alleviate pressure on the city centre. These are designated as Strategic Intervention Areas (OSI), which will become the most important nodes of activity outside the metropolitan core. Warsaw presents a similar approach, aiming to create a metropolis with a hierarchical structure and a network of local centres enabling residents to meet their daily needs in their place of residence without the necessity of long commutes. Due to its scale, Sopot theoretically best fulfils this postulate, providing standard walking access to basic services within 10–15 minutes (buffer of 600–900 m). The strategy indicates that Sopot’s existing urban layout already largely predisposes it to function as a model city of short distances. Gdańsk bases its structure on the Central Service Belt (Śródmieście, Wrzeszcz, Oliwa) and the development of lower-order centres that complement the city’s polycentric structure. A notable initiative is the creation of the New Gdańsk South Centre to improve the quality of life in this rapidly developing part of the city. Wrocław focuses on multifunctionality of neighbourhoods located away from the centre, striving for compact structures to counteract suburbanization. Poznań also bases its development on the model of a “compact city of short distances”.

Most analysed cities aim to create a hierarchical network of centres that will take over some citywide and metropolitan functions, thereby alleviating pressure on historic city centres. Furthermore, the strategies emphasize the necessity for a functional mix, i.e., “complementing” residential development with services, workplaces, as well as educational and cultural functions.

Gdynia and Gdańsk focus on “completing” existing residential structures with services, greenery, and workplaces to meet residents’ daily needs within walking distance, which is intended to foster social integration (Letkiewicz, 2022, p. 4). Gdańsk plans, among others, the creation of the New Gdańsk South Centre to introduce services into a rapidly developing residential district. Gdynia aims to shape compact spaces with diverse functions within districts. Its plans are directed toward a compact urban structure.

Kraków aims for the transformation of monofunctional office centres into “living centres” by introducing public spaces and recreational functions. It also plans to intensify development in designated local centres while introducing

service functions into housing estates. Poznań implements the “Friendly Neighbourhoods” priority, striving to create local activity centres with a unique commercial and service offer using smart technologies. Sopot promotes a model in which the residential function is treated as primary or complementary in all new structures to prevent the creation of enclaves of luxury or dead service zones (Pokrzywnicka, 2017, p. 236). Warsaw also adopts a planning model combining residential and service goals to shorten the distance between home and work.

7.2. Problems, omissions and declarations

Despite the declarations, the strategies highlight a number of barriers to achieving a polycentric city model. Monofunctionality, i.e. the dominance of a single land-use type (e.g. exclusively residential or office), is identified as a significant threat to social cohesion, transport efficiency, and quality of life. An analysis of strategic documents highlights several dimensions of this problem.

In cities such as Gdynia and Kraków, the phenomenon of suburbanisation is observed, which increases commuting times to work and education and contributes to a rise in car traffic (Kopeć, 2019; Gałka et. al., 2020, p. 39). This phenomenon is particularly prevalent where population growth rates are highest.

Sopot has identified a specific risk whereby investments aimed at maximizing profit, such as the short-term rental market, are displacing permanent residents, a situation which has drawn opposition from the local community (Jasińska, 2019, p. 16). Such investments create rather dysfunctional areas that are ‘alive’ only seasonally or at specific times of the day. A similar problem concerns single-purpose office and retail complexes, which become deserted spaces after working hours. In response to these issues, Sopot’s housing policy aims to slow down depopulation and improve the city’s social structure by recommending the promotion of genuine residential functions there (Krystek-Kucewicz & Kaszuba, 2018, p. 48).

Urban sprawl (e.g. in Poznań, Wrocław, Gdańsk and Kraków) leads to the development of low-density housing estates with weak community ties, partly due to a lack of local services, and results in increased infrastructure costs (Lityński, 2015; Lityński, 2016; Gorzym-Wilkowski, 2017; Masik, 2018; Kubiak, 2019, p. 7). Declarations of a ‘city for everyone’ clash with the reality of high prices and a shortage of council housing (Sopot, Kraków, Warszawa).

Warsaw exhibits marked disparities in access to public services, social and technical infrastructure between its various districts, with the city centre leading in terms of accessibility, while peripheral districts are characterised by underdeveloped public services (Małachowski, Dąbski, & Wilk, 2020, p. 176). Despite the priority given to rail and trams, suburbanisation is outpacing investment in rail transport, forcing residents of ‘nearby cities’ to use cars (Poznań, Gdańsk, Wrocław). Poznań and Wrocław, like other cities, are grappling with high car ownership rates, which hinders the transformation of public spaces into pedestrian-friendly local centres (Szczuraszek & Chmielewski, 2018; Gadziński & Goras, 2020, p. 1025).

7.3. Access to green spaces and their layout

The idea of an even distribution of green spaces is ensured by operationalizing standards for access to green spaces, most often using distance or time-based measures. Wrocław, Poznań and Kraków use a standard of 300 meters from the place of residence to the nearest landscaped green space as a benchmark for quality of life. The effectiveness of implementing these objectives varies: in Wrocław in 2017, 77.1% (City of Wrocław, 2017, pp. 35-37) of the total population met this criterion (90.5% in the city centre), while in Kraków in 2022, 60.21% of the population had access to green spaces within this radius (City of

Krakow, pp. 146–153). Poznań, despite having a unique wedge-and-ring system, acknowledges that green spaces are unevenly distributed and many people live far from parks; Gdańsk, on the other hand, uses a time-based standard, aiming to ensure that every resident can reach a forest or park covering an area of over 2 hectares within a 15-minute walk.

The spatial structure of natural systems is based on integrated strip and wedge models, which are designed to ensure ecological continuity. Poznań continues to develop a wedge-ring system, unique on a national scale and based on river valleys, which is intended to ensure proper ventilation of the city and create a specific microclimate, as well as connectivity with suburban areas (Wodzińska, 2015; Urbański et al., 2019, p. 16). A similar concept of ‘blue-green corridors’ along watercourses is being implemented in Gdańsk, treating them as a recreational and retention framework (Szydłowski et al., 2023; Matusik, et al., 2020, p. 66). In Kraków and Warsaw, river corridors (the Vistula) play a key role, with plans to link scattered green spaces into a coherent system of river parks.

In areas with dense inner-city development, strategies envisage micro-green spaces, such as pocket parks, squares and courtyards, designed to counteract urban heat islands. Kraków and Gdynia have pledged to create “pocket parks” and local squares within housing estates so that green spaces accompany residential development. Kraków monitors progress in this area through the number of urban and pocket parks, of which 102 were recorded in 2022. Wrocław promotes the slogan “Greenery without borders,” which envisages the ubiquity of vegetation even in small spaces, while Sopot applies strict percentage targets for biologically active areas in new developments, ranging from 45% to as much as 65% in spa protection zones (City of Wrocław, 2017, pp. 35–37).

Forest resources are a key component of urban systems, and in coastal cities they constitute a dominant feature of the landscape. Gdynia leads the way in this respect, with 46% of its area covered by woodland, and the Tri-City Landscape Park borders directly on residential districts there. Sopot also bases its status as a health resort on the forests covering more than half of the city’s territory. Cities located inland, such as Kraków, are planning to gradually increase their forest cover (from 4.81% to 8% by 2040), recognizing this as key to climate protection and water retention (City of Krakow, pp. 146–153).

Modern strategies integrate green spaces with the transport network, aiming to create so-called “green streets” and avenues. Wrocław plans for rows of trees and green belts to line all pedestrian and cycle routes, serving both aesthetic and insulating functions. Gdańsk plans to supplement tree planting along major transport corridors, which is intended to enhance the attractiveness of public spaces and improve the local microclimate. Sopot and Poznań highlight the role of street-side greenery in calming traffic and improving safety for vulnerable road users.

7.4. The Concept of the ‘City of Short Distances’: Transport and Accessibility

Most strategies adopt a compact city model, which aims to eliminate the need for long journeys. Warsaw plans a polycentric structure in which residents can meet their daily needs (services, work, leisure) within their local areas. Progress in this area is measured using the ‘Convenient Local Infrastructure Index’ and the percentage of people using services close to home. Poznań and Gdańsk define themselves as “cities of short distances”. In Gdańsk, this concept involves inward development and filling in established urban structures to ensure proximity to services. Gdynia aims to shape the city as a ‘compact city’, which is intended to ensure quick access to workplaces, services, and leisure. Wrocław emphasizes the importance of polycentricity, i.e. the creation of many well-connected and compact neighbourhoods, which is intended to prevent

suburbanisation and longer journeys. Sopot points out that its established urban layout already allows for high accessibility of services within walking distance, which must be protected against processes of monofunctionality.

7.5. Accessibility standards and the 15-minute city concept

Kraków is adopting a standard of 15-minute access to essential public services at the neighbourhood and housing estate level. The city plans to monitor accessibility using very specific distance-based indicators: 300 m to public green spaces, 400 m to a public transport stop, 500 m to a crèche and nursery, 750 m to a primary school, 1000 m to healthcare, cultural and sports facilities, and SKA stops. Poznań sets a standard for access to developed green spaces (with an area of at least 1000 m²) at a distance of no more than 300 m from the place of residence. Wrocław uses an indicator of the population living within 300 m of green spaces of any size. Gdańsk aims to ensure that every resident can reach a forest or park covering more than 2 ha within a 15-minute walk. Sopot most clearly defines the concept of the 15-minute city, striving to provide services within a 15-minute walking distance. The strategy operates with two main buffer zones: 600 m (a 10-minute walk) and 900 m (a 15-minute walk) for facilities such as primary schools and suburban railway stations.

8. Summary

The issue of polycentricity in strategies is not limited to spatial planning but is treated as a way of building social capital and local identity through the creation of meeting places and civic activity close to home. Counteracting monofunctionality is treated as a necessary condition for achieving sustainable development. The transition from monofunctional zones to integrated, multifunctional spaces aims not only to reduce car traffic but above all to build social capital and local identity. Cities such as Sopot and Kraków caution that a lack of control over this process may lead to the degradation of the social idea of urbanization and its attractiveness for residents.

8.1. The main problem with all strategies is the disconnect between vision and practical feasibility

Despite ambitious declarations, assessments point to an uneven distribution of green spaces and intense development pressure on these areas. Poznań openly admits that many residents still live far from parks, and that green spaces are distributed unfairly. Warsaw identifies the problem of unequal access to recreational facilities across different districts, whilst Gdynia highlights a shortage of publicly accessible recreational areas on the outskirts. In Kraków, it is noted that environmentally valuable wasteland and biologically active areas are under constant threat from urbanisation, which requires strengthening their legal protection.

All cities declare that they prioritise public transport and active mobility (walking and cycling). However, assessments point to significant shortcomings. Gdynia and Gdańsk acknowledge that the pace of transport infrastructure development is failing to keep up with the rapid growth of new residential districts, which is leading to transport exclusion in the suburbs. Wrocław and Kraków are grappling with a high proportion of private transport (around 36%), which, despite declarations of a “green city”, remains a difficult trend to reverse. Warsaw highlights significant differences in access to transport infrastructure between individual districts.

Table 2. Comparative overview of urban strategies

City	The main idea	The postulate of polycentrism	Multifunctionality	Transport accessibility	Availability of greenery	Main shortcomings/ Declarativeness
Gdansk	Gdansk 2030 Plus	Inward development, polycentricity	The city of short distances	Hierarchy: pedestrian, bicycle, public transport	Standard: 15 min to the park/forest	Transport deficits in the South; high motorization
Gdynia	Gdynia 2030	Compact city	Integrating services and work into estates	Development of trolleybuses and bicycle routes	Greenery in every district	Inadequate pace of infrastructure development for districts; monofunctionality of the peripheries
Cracow	I want to live here	A city of many cities; 27 district centers	Proximity to services within 15 minutes	Integration of SKA and multimodal nodes	River and pocket parks	Segregation of functions; lack of housing for the middle-income
Poznań	Strategy 2020+	Multicentric layout with greenery wedges	Local activity centers	Metropolitan railway and eco-mobility	Uneven distribution of parks	Small-scale innovation by local companies; resistance to limiting cars
Sopot	Strategy 2022–2030	15-minute city (standard 600m)	Protection against monofunctionality	SKM and e-bus priority	Minimum % of greenery in spa zones	Tourism displacing residents; housing shortage
Warsaw	#Warsaw2030	Polycentric and hierarchical structure	Local activity centers	Reduction of car traffic; network hierarchy	Green infrastructure	Unequal access to services between districts
Wroclaw	Strategy 2030	A city of many compact settlements	Local Activity Centers (CAL)	Wrocław Mobility Policy	Standard 300m to green area (monitored)	Highest number of crimes; smog

9. Findings

We first assess the development strategies collectively. In general, we find a high level in quality of documents, increasing the likelihood that the strategies can be effectively used to guide development and future planning actions. We note that the formulation of these strategies was a multi-year localized and collaborative process and began with public listening sessions in the early stages, followed by plan development, and consultation with the public as the planning process matured before reaching completed development strategies (and eventual adoption by local city councils).

Collectively, the strategies address climate change (air, water, climate protection), tourism development, cultural heritage, and maintaining (and improving) the quality of life. The embedded planning strategies emphasize growing land-use conflicts and intense development pressure. Central areas of many Polish cities are rapidly urbanizing, often at the expense of greenfield and historical landscapes, while peripheral zones lag behind in terms of infrastructure and services. Key spatial planning challenges include insufficient public transportation capacity, tensions between heritage conservation and residential expansion, and fragmented water and wastewater infrastructure. Consequently, the development strategies seek to rationalize spatial planning and make planning more coordinated and coherent while enhancing human development, social capital, human capital, and civil society. Some of the documents specifically support the presence of Ukrainian war migrants in Poland and acknowledge ongoing challenges from the 2022 Russian invasion of Ukraine (Hess, From the conflict border: urban response to the refugee crisis in Poland resulting from the 2022 Russian invasion of Ukraine, 2024). While local economies in Poland are generally healthy and the national GDP is rising, some of the strategies (e.g., Sopot) specifically address an aging population and shrinking cities in de-industrialized places.

In topics related to 15-minute city planning, the strategies emphasize the importance of strengthening and diversifying local economies and public services, enhancing affordable housing, and coordinating limited spatial resources with higher densities, compact development, and non-motorized transport (especially walking access³), to reach destinations. Featured prominently are strategies for restricting automobile travel (especially in city centres) and re-invigorating public transport and non-motorized transport. In addition, the documents discuss strengthening the 'digital tissue' of cities by increasing digital competency of citizens and residents, providing more open-source data about cities and planning, and providing opportunities for people to engage with city governance.

The Wrocław Strategy 2030 engages the least among all plans with 15-minute city planning, and the #Warsaw 2030 Strategy engages with 15-minute city planning at a higher level than the other plans.

We next present findings from our review of the strategic planning documents. We explore the contents of the plans along four dimensions in which the 15-minute city vision can be operationalized: density, proximity, diversity, and digitization (Moreno et al., 2021). We provide examples of concepts and quoted passages related to Moreno's four dimensions of 15-minute city planning (see Table 2).

Four key findings emerge from this research:

1. **Cities in Poland are largely monocentric and high-density residential neighborhoods near the city core, and these conditions support 15 minute city access.** Cities often include a centrum (or historic old town) dating from the medieval era, surrounded by neighborhoods of tenement apartment buildings dating from the pre-World I and interwar periods (Stępnik et al., 2013). These places tend to be compact (with mixed uses in buildings) and walkable and well-served today by public transport. During the socialist era (1947 to 1989), planned housing estates with embedded community services were added to cityscapes to cope with housing needs from industrialization and emigration to cities. After 1989, a free market economy was established, and new housing was added in peripheral places in the form of apartment buildings and single-family detached houses. In almost all cases of the studied strategies of development, there was a call for the establishment or strengthening of local centres in each district, housing estate, or specific part of a city. These centres were envisioned as part of a hierarchical system and were often positioned in relation to the main historic city centre. This approach supports the implementation of the 15-minute city and its assumptions and possibilities.
2. **Given the historic partition of Poland, and the variation in urban form among Polish cities, a localized approach to policy for 15 minute cities is sensible.** We examine development strategies from Poland's three main regions under distinct influence throughout the 19th century. Before World War II, geopolitical fragmentation occurring in Poland's regions occupied by Prussia, Austria-Hungary, and Russia resulted in distinct institutional legacies and urban forms enduring today. Some cities in Poland exhibit monocentric structures while other cities exhibit dispersed polycentricity. With different legacies of urban environments and development trends, local planning officials (supported by engagement with their local constituents) are in the best position to devise plans and programs for 15 minute cities. Localized approaches allow tailored responses to enhancing walkability and are consistent with planning trends that return to local priorities (Carmona, 2021).

³ For example, the 'Walk in Kraków' webpage as part of the city government website, and it encourages walking, provides walking maps and lists average walking duration walking duration (in minutes) between intersections and important destinations, explaining that people often perceive distances to be greater than the distances are in reality.

3. **Socialist-era residential districts have great potential to function as 15 minute cities.** Constructed during the communist era between 1949 to 1989, a time of rapid production of planned residential districts, housing estates surround all Polish cities. Housing here tends to have a high level of walking access to essential daily needs including healthcare, local shops, public transport, and parks. We attribute this remarkably high level of accessibility to the legacy of strict urban planning regulations – emphasizing access and proximity – in Poland during the socialist period. We suggest further reinforcing the access and proximity inherent in the built environment of housing estates with policies and plans to maintain and enhance their walkability.
4. **Plans and policies supporting 15 minute cities can help control the negative effects of fragmented and auto-mobile oriented suburban development.** Poland transitioned to independence in 1989 – at which time it began forming a non-communist government – after the conclusion of the Cold War and the disintegration of the Soviet. Since the formative of a democratic republic and its current growing economy, there has been increasingly more development of ‘bedroom communities’ in commuter suburbs, and these new developments often lack services and make it difficult for residents to meet daily needs (Majewska et al., 2022; Wdowiarz-Bilska et al., 2024). These new suburban residential developments are increasingly dispersed and require automobiles for full participation. With travel needs in these places best met with private automobiles (Szagała, Brzeziński, Dybicz, Olszewski, & Osińska, 2024), there is an overall shift away from public transport to driving, and this results in more vehicles entering city centres for work, shopping, dining, and entertainment. Residents in these suburban districts often experience social isolation and there is a lack of destinations reachable by walking (Majewska et al., 2022).

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