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WARSAW'S TRANSPORTATION STRATEGY



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This exhibition has been prepared by the Roads and Public Transportation Department (BDiK) and the Architecture and City Planning Department (BAiP) of Warsaw City Hall.

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Warsaw 2010

WARSAW'S TRANSPORTATION STRATEGY



Ladies and Gentlemen!

The Council of the Capital City of Warsaw passed the “Strategy for Sustainable Development of the Warsaw Transportation System to the Year 2015 and Beyond” on July 9, 2009. Its implementation will be one of the most pressing tasks supporting the city’s economic growth and the improving the living standards of its inhabitants, all bearing in mind respect for the natural environment. The Strategy fosters the elimination of barriers arresting the development of Warsaw and the creation of mechanisms that have a positive impact on various areas of life.

The Strategy assigns special importance to strengthening the role and expanding the range of mass transit. It assumes that a primary role will be played by rail transportation, which will define the efficiency of the functioning of Warsaw and its agglomeration. Action shall be concentrated on improving services for residential districts, Downtown, and the main routes leading to the center. This signifies an improvement in the quality of lines currently in operation as well as the development of the system. Modernization is underway in the case of tramway routes, the building of a tramway route to Tarchomin, and a second subway line. Obsolete bus and tram rolling stock is being replaced at a rapid rate. Improvement in railroad transportation will take place thanks to the development of the municipal carrier—SKM.

The Strategy assumes the building of express routes serving as ring roads (encircling the Downtown and connecting districts) as well as routes leading out of Warsaw. This will facilitate an improvement in vehicle traffic conditions, which will ease the carrying of freight, decrease the negative impact on the natural environment, and on residents. Warsaw’s center, well served by mass transit, shall have road building limited to a minimum and be mainly concerned with the implementation of revitalization plans. Also implemented will be advanced methods for managing traffic and improving the efficiency of infrastructural use.

Also growing will be the role of the bicycle as an important means of transportation in Warsaw. The development of bicycle road and parking infrastructure shall create possibilities for quick, efficient, and safe travel by bicycle around the city. An important task shall be the improvement of traffic safety and the personal security of people using transportation as well as the adapting of the city to meet the needs of senior citizens and the disabled.

The Strategy ranks the following as priorities:

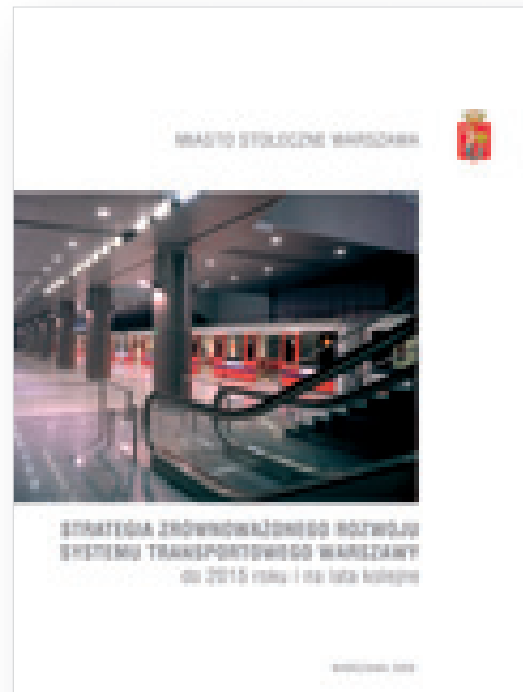
- Improving the efficiency of road traffic and mass transit management,
- Improving the quality of mass transit,
- Elimination of backlogs in street and facility renovation as well as in their modernization,
- Building high-quality ring roads and new bridges across the Vistula River,
- Giving order to the parking system,
- Improving the safety of road traffic, and
- Development of bicycle traffic.

The Transportation Strategy is aware of the fact that thanks to co-financing by the European Union as well as in connection with the organization of the EURO 2012 Soccer Championship Finals, Warsaw’s transportation system is facing a historic opportunity to make up for delays and to create foundations for its further intensive development over successive years. However, this requires our joint mobilization and determination in implementing identified goals.

I would like to invite you to not only look at the exhibition presenting the transportation strategy for the Capital City of Warsaw, but also to actively take part in its implementation.

Hanna Gronkiewicz-Waltz
Mayor of Warsaw

WARSAW'S TRANSPORTATION STRATEGY



The coordinator of work on the "Strategy for the Sustainable Development of the Warsaw Transportation System to the Year 2015 and Beyond" was the Roads and Public Transportation Department (BDiK) of Warsaw City Hall.

Strategy authors

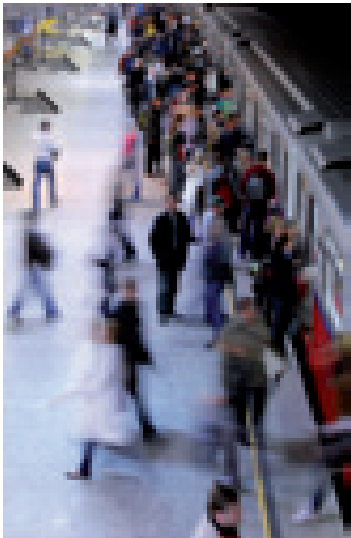
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Full text "Strategy for the Sustainable Development of the Warsaw Transportation System to the Year 2015 and Beyond" and the exhibition on website:

www.um.warszawa.pl/strategiatransportowa



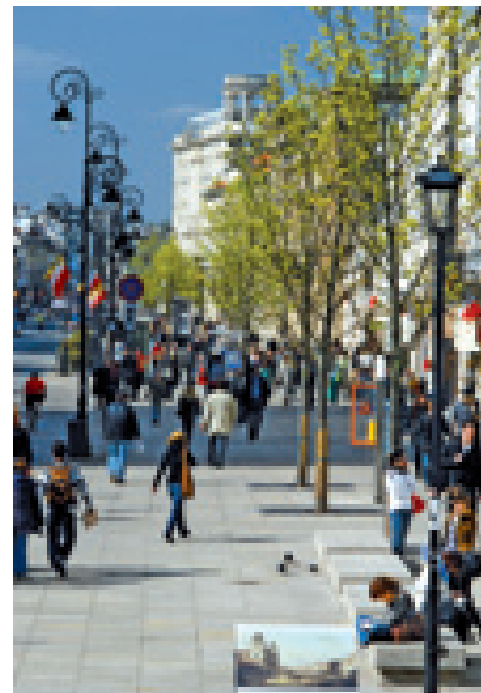
OVERALL OBJECTIVE



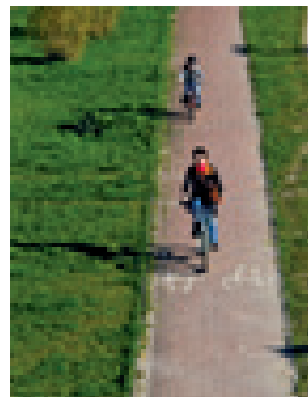
The overall goal of the transportation strategy is improvement in efficiency and the development of Warsaw's transportation system so as to create conditions for the efficient and safe movement of people and goods while limiting the detrimental impact of transportation on the natural environment and living conditions.

Implementation of this goal signifies:

- Improvement in access to destinations within the city thanks to increased accessibility of its center and improved connection among districts;
- Improvement in access to primary transportation nodes (the airport, railroad stations, and mass transit transfer nodes);
- Improvement in traffic safety as well as the personal safety of inhabitants;
- Improvement of the state of the natural environment;
- Economic development of Warsaw and growth in the affluence of its inhabitants;
- Strengthening the prestige of Warsaw and improving its image.



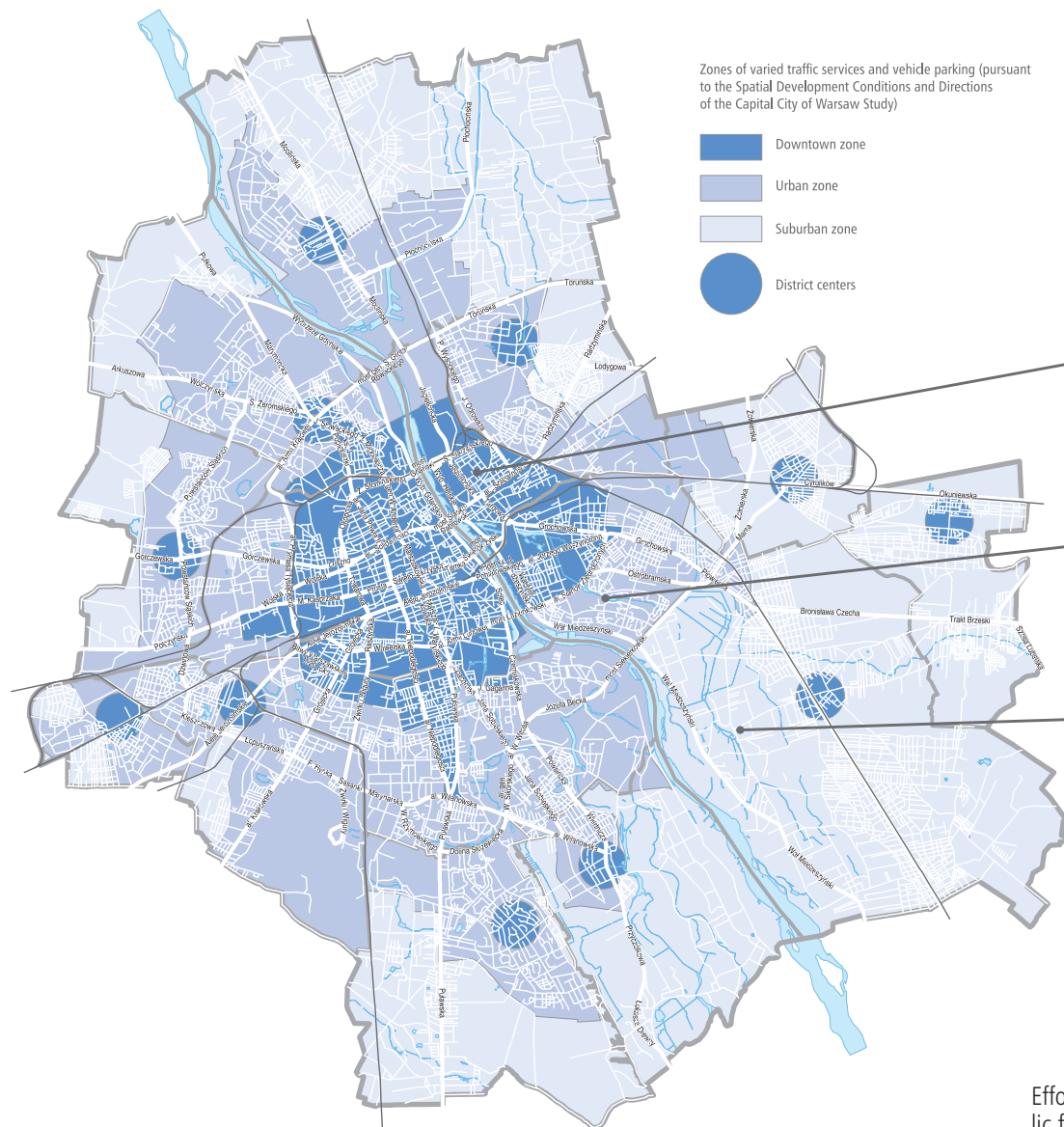
DETAILED OBJECTIVES



- PRIMARY GOAL Guarantying the potential for commuting through internal and external links.
- DETAILED GOALS
- Stopping degradation and striving to guaranty high quality transportation infrastructure
 - Development of the road network guarantying links among city areas as well as links on a metropolitan, regional, national, and international scale
 - Integration of public transit systems encompassing the Warsaw agglomeration
 - Improvement in the accessibility of areas that are primary destinations by travel means other than the automobile
 - Increasing the efficiency transportation management
 - Improving freight transportation
 - Increasing the efficiency of the city's connection with Okęcie airport
 - mproving access to railroad stations and stops
- PRIMARY GOAL Improving travel standards, including increased accessibility to the transportation system by the disabled
- DETAILED GOALS
- Improvement of travel standards in the mass transit system
 - Improving travel conditions for people with restricted motion abilities
- PRIMARY GOAL Stimulating economic development and spatial order
- DETAILED GOALS
- Rationalization of the transportation behavior of inhabitants
 - Reinstating urban functions to streets
 - Increasing the efficiency of the transportation system

- Rationalizing the city's spatial development
 - Mitigating unbalanced public transit services in specific city areas
 - Reducing barrier effects and the cutting of neighborly bonds
- PRIMARY GOAL Improving traffic safety and the personal safety of transportation system users
- DETAILED GOALS
- Improving traffic safety so as to decrease the number of fatalities and severe injuries in Warsaw
 - Improving the personal safety of general transportation system users
- PRIMARY GOAL Improving the state of the natural environment and decreasing the detrimental nature of transportation for inhabitants
- DETAILED GOALS
- Restricting noise
 - Protecting the air and water
 - Protecting public health
- PRIMARY GOAL Raising the prestige and image of the city
- DETAILED GOALS
- Improving the quality of the landscape
 - Improving the quality of urban space
 - Raising the attractiveness of the city for investors
 - Bringing the city closer to the Vistula River

CITY TRANSPORTATION ZONES



TRANSPORTATION PRIORITIES BY CITY ZONES

ZONE I



ZONE II



ZONE III

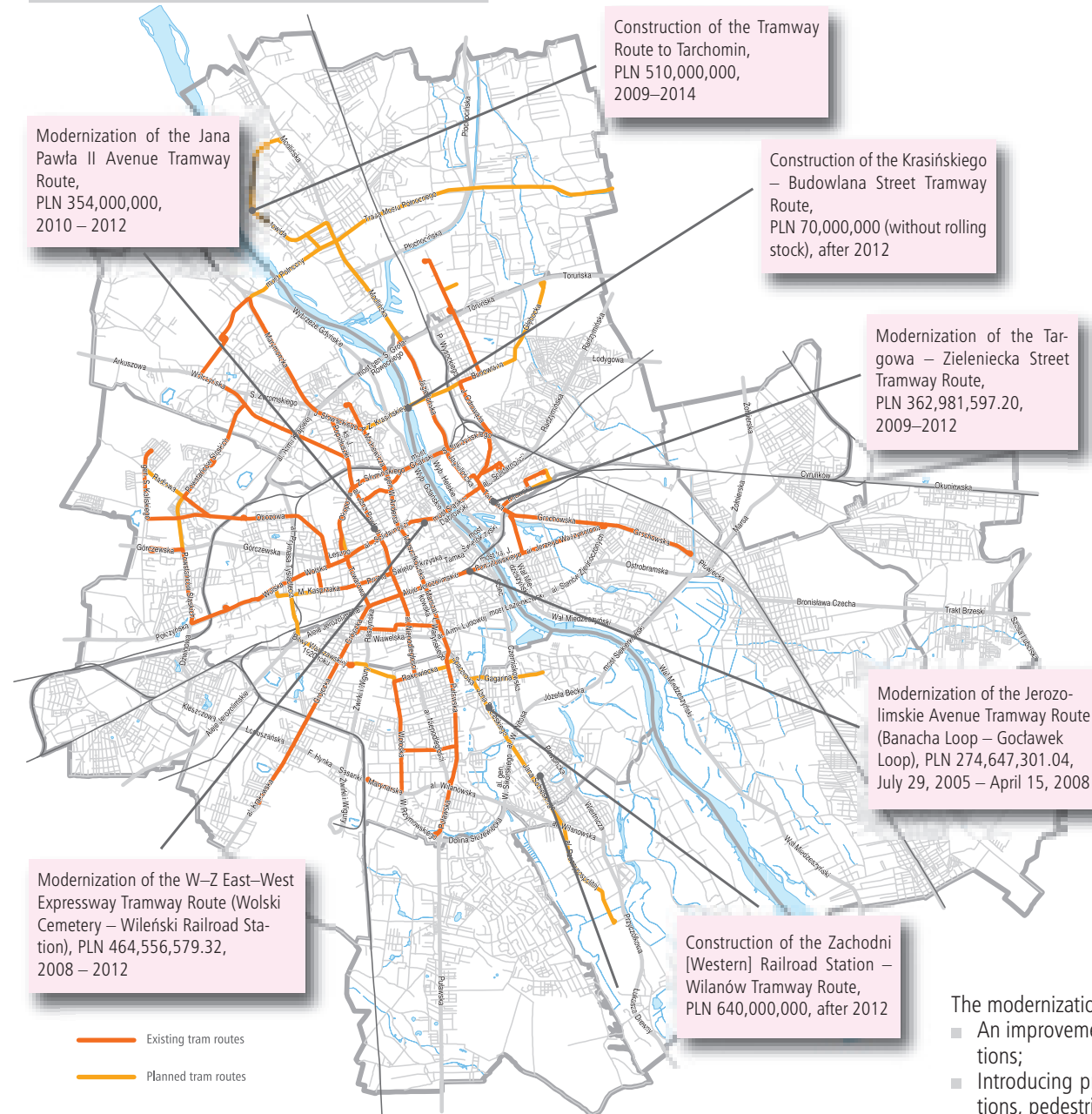


Actions taken will be diversified depending on the area of the city. Mass transit will be treated as a priority in all strongly urbanized regions, areas that are densely built up, and those with limits on throughput (Zone I) as well as in the case of major access roads to the center of Warsaw (Zone II). Privileged status will involve the setting aside of bus lanes, the mutual organization of tram and bus traffic (as is currently applied on the WZ East–West Route), and the facilitating of travel across intersections with light signals by busses and trams.

Efforts in Zone I will be directed at raising the quality of municipal space and returning streets their public functions. This will necessitate a reduction in automobile traffic concentrations and the facilitating of safe bicycle and pedestrian traffic.

A different approach to transportation organization will be applied in areas built up more loosely (Zone III). The role of public transit will be smaller in such areas, with the exception of major access routes leading to transfer nodes and the city center. The coordination of various means of transportation and the facilitating of transfers to rapid rail systems (subways, tramways, and railroads) will be a priority. It is in the zones outside of the center that the expectations of motorists for convenient use of automobiles will be met (the building of routes in ring road directions and the guarantying of parking spaces).

MODERN TRAMWAYS



Warsaw has a well-developed tramway system with great potential to be attractive to passengers—124.1 km [77.1 miles] of routes served by twenty-six lines with a total length of almost 400 km [249 miles]. Utilization of this potential will occur as a result of the implementation of a tramway modernization program. In line with world tendencies, trams shall become a modern and very comfortable means of transportation perfectly capable of competing with the automobile.



The modernization program shall entail:

- An improvement to the technical state of the infrastructure in order to guaranty reliability of tram operations;
- Introducing privileged crossings for trams at collision points through controlled light signals (intersections, pedestrian crossings, etc.);
- Replacing obsolete rolling stock with modern, low-floor trams that are comfortable for passengers and facilitate entry and exit at stops;
- Modernization of stops, their widening, better equipment, and electronic passenger information systems.

The expansion of the network of tramway routes is also planed in step with needs resulting from the development of new districts. Designs are being developed for new tramway routes: Bemowo – Wilanów, Młociny – Tarchomin, Kasińskiego – Budowlana Expressway. Work is also underway on planning with the intention of indicating directions of system development over successive years.

THE WZ EAST–WEST ROUTE



plac Wileński



Old Town



Ratusz Arsenal Metro station



During rush hour, a total of 11,600 people use busses and trams over the modernized WZ East–West Route. This means that 84 percent of people chose public transit on the Śląsko–Dąbrowski Bridge!

Modernization and Warsaw's first attempt at isolating tram–bus lanes (TTA) brought significant benefits for both busses and trams. Passengers on this route travel at a rate of 20.1 km/h to 23.5 km/h [12.5 mph – 14.6 mph] during rush hour. Prior to modernization (as based on research conducted over the years 2006 and 2007) travel speed did not exceed 9 km/h [5.6 mph]! Thanks to automobile and mass transit traffic segregation, journey times from Praga District to the center of Warsaw have been shortened significantly.

The introduction of this solution has met with notable favor by Warsaw's residents. A total of 84 percent of bus and tram passengers are of the view that such solutions would also be worthwhile on other tram routes in Warsaw. Also positively rated is the convenience of joint stops and the ability to freely select bus or tram.

BY TRAM TO TARCHOMIN



The plans for the construction of the tramway route from the Winnica loop (in Białoleka), via the Północny [Northern] Bridge Route, to the Młociny transfer node, encompass:

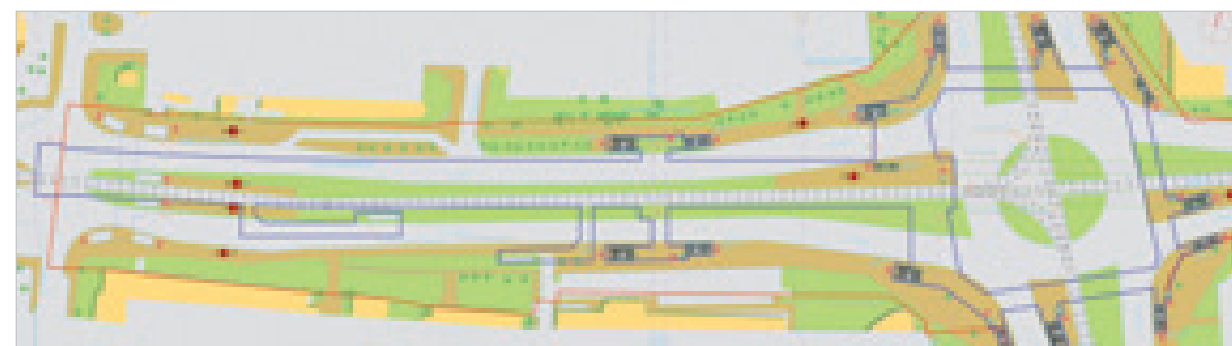
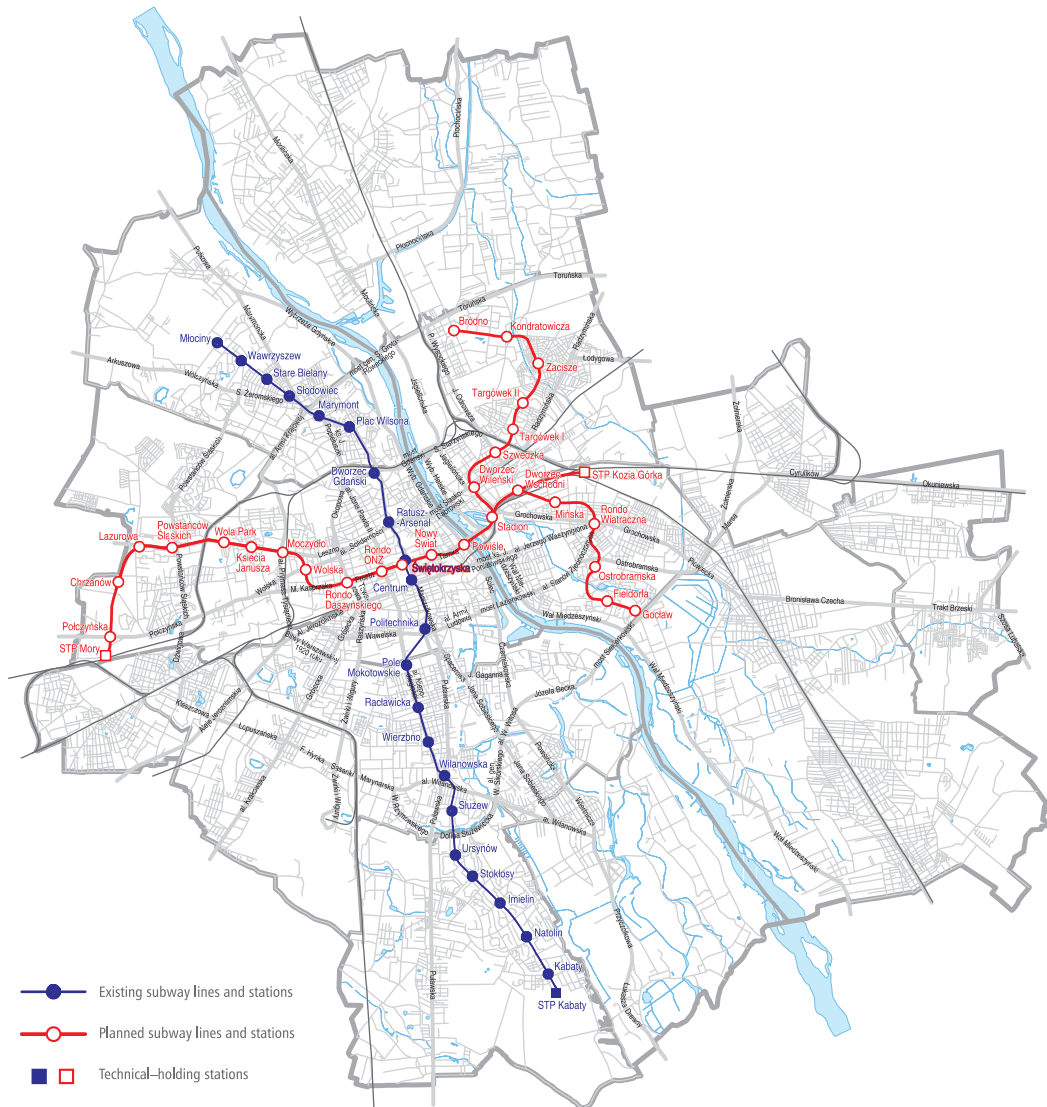
- Modernization of the currently operating Zgrupowania AK "Kampinos" Street tramway route,
- Reconstruction of the Marymoncka Street tramway node,
- Construction of a dual-track route of a length of 6.6 km [4.1 miles] from the Winnica loop to Marymoncka Street,
- Building twelve sets of stops equipped in electronic passenger information services,
- Procurement of thirty-two modern, low-floor trams.

The new tramway route will guaranty convenient access from Tarchomin to Bielany, including to the Młociny transfer node. It is assumed that tram journey time to the No. 1 subway line will amount to:

- From the Winnica loop to Młociny – 21 minutes,
- From the Mehoffera Street junction area to Młociny – 14 minutes.

The new tramway route will be used by approximately 6,500 passengers per hour. As Białoleka develops, the number of commuters may grow by up to a factor of two. The design frequency for this route is one tram every two minutes.

NO. II SUBWAY LINE DESIGN



Rondo Daszyńskiego

Drawings from the "Multidisciplinary Concept Design for Design and Construction of Central Section of II Line of the Underground in Warsaw from Rondo Daszyńskiego to Dworzec Wileński"



Rondo ONZ



Dworzec Wileński

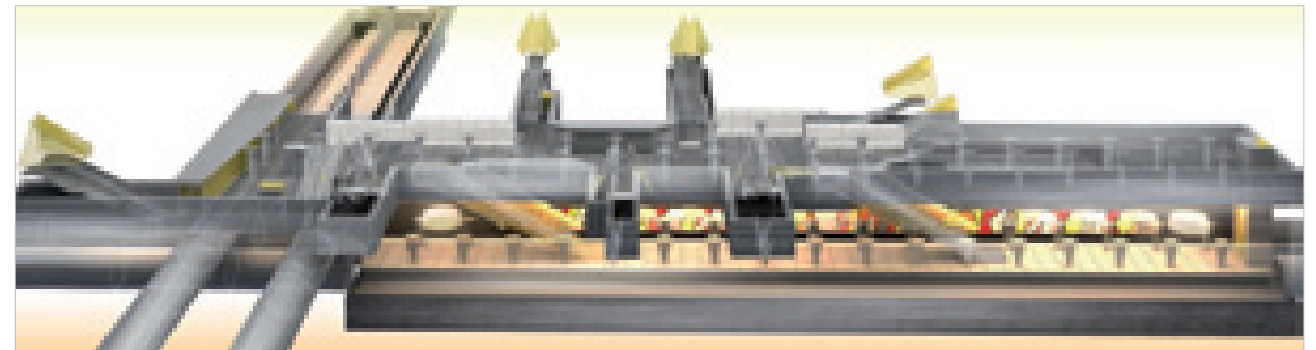
The No. II subway line shall guaranty quick rail connections between left- and right-bank Warsaw. Thanks to a junction with the No. I subway line (at the Świętokrzyska station), transfer will be possible for travel along the two main transportation axes of Warsaw—north-south and east-west. Twenty-seven stations are planned for the No. II subway line from Bemowo to Bródno and Gocław. The No. II subway line will be 32 km [19.9 miles] in length.

The No. II subway line is on what is known as the individual project list and is applying for financing from the European Union Cohesion Fund within the framework of the Infrastructure and Environment Operating Programs.

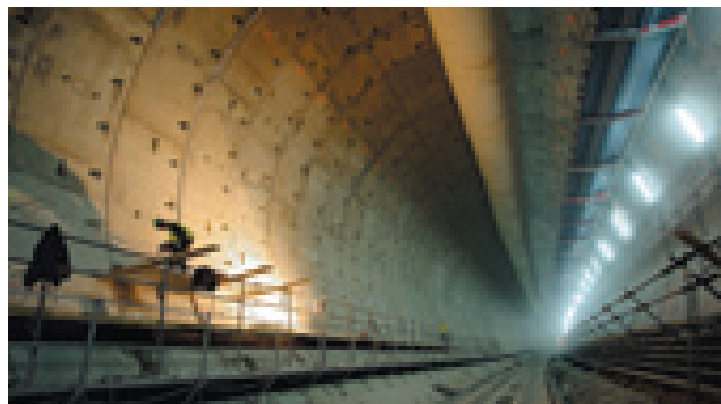
Construction of the central segment of the No. II subway line is underway. This project encompasses:

- Construction of a tunnel 6.5 km [4 miles] in length leading under the tunnel of the No. I subway line as well as below the bottom of the Vistula River;
- Building of seven stations (Rondo Daszyńskiego, Rondo ONZ, Świętokrzyska, Nowy Świat, Powiśle, Stadion, Dworzec Wileński);
- An underground link between the No. I and No. II subway lines making possible access to the Kabaty depot to subway cars serving the No. II subway line.

NO. II SUBWAY LINE CONSTRUCTION TECHNOLOGY



Świętokrzyska



The Central Segment of the No. II Subway Line in Numbers

Most extreme dimensions:

- Longest station – Rondo ONZ – 157 m [515 feet]
- Widest station – Stadion – 43.6 m [143 feet]
- Deepest station – Nowy Świat – 24.40 m [80 feet]

Largest volumes:

- Station housing – Stadion – 83,978 m³ [2,965,655 cu. feet]
- Underground link – Stadion – 21,115 m³ [754,669 cu. feet]

Largest total areas:

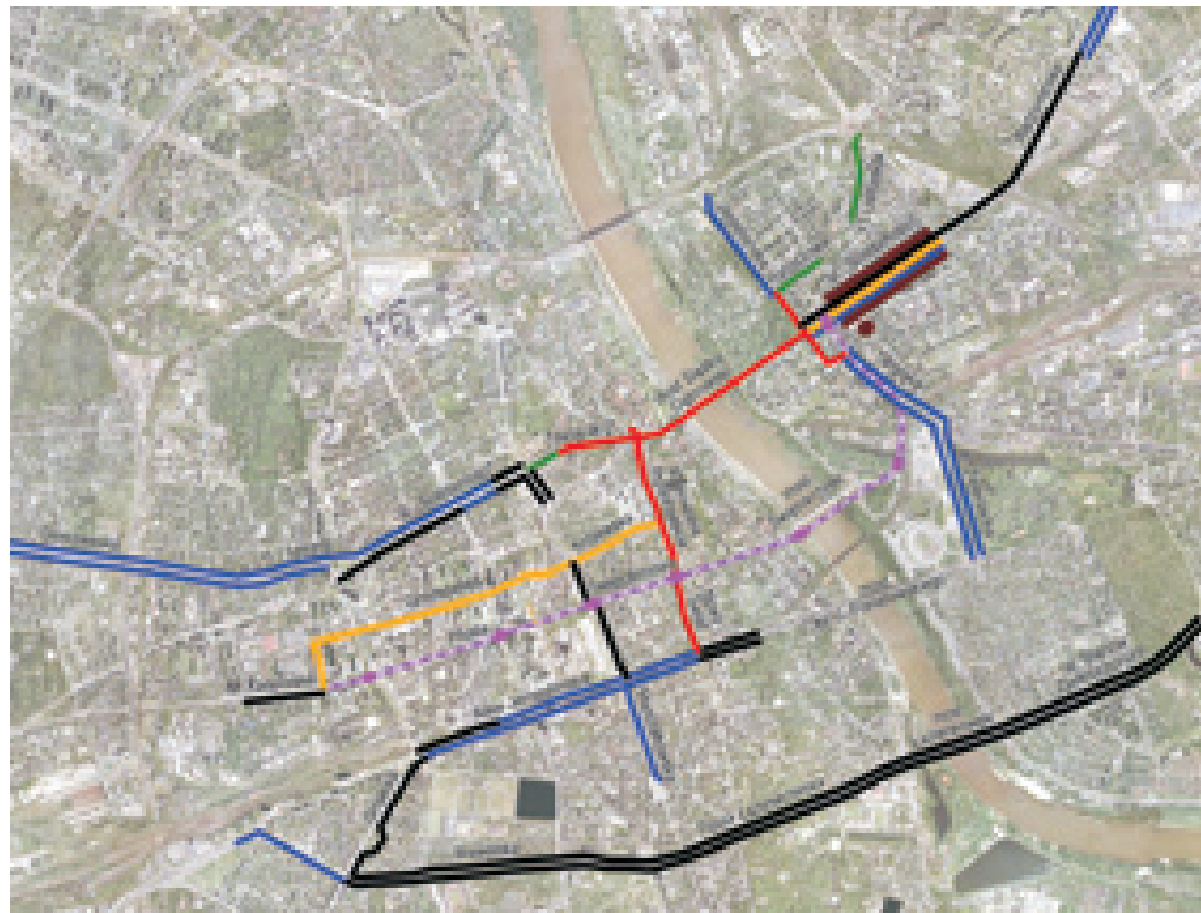
- Station housing – Stadion – 15,780 m² [169,151 sq. feet]
- Underground link – Stadion – 4,223 m² [153,095 sq. feet]

Subway cross section:

- Two single-track tunnels with circular cross sections made by tunnel boring machines (TBM).
- Interior tunnel diameter – approximately 5.50 m [18 feet], exterior tunnel diameter – approximately 6.10 m [20 feet]

All No. II subway line stations shall be built using an open earth-work method (floor slabs) with diaphragm walls securing the earth-work, including the outer station housing structure.

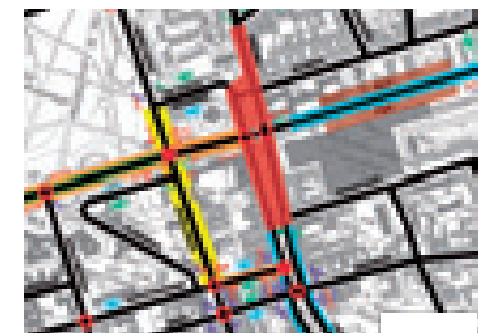
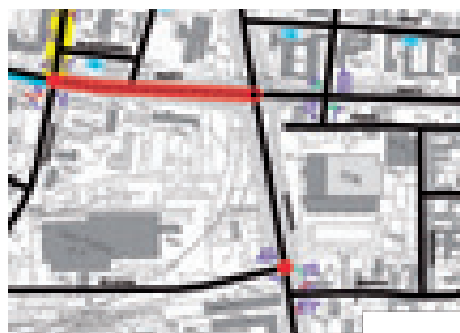
TRAFFIC ORGANIZATION DURING CONSTRUCTION OF THE NO. II SUBWAY LINE



Drawings based on developed designs for changes in traffic organization for the duration of construction of the No. II subway line.

- Existing bus lanes
- Planned bus lanes
- Traffic organization restricting individual traffic
- Streets restricted to mass transit
- Tramway-bus lanes
- Central section of the No. II subway line, including stations
- Park and Ride (P+R) parking system

- ▨ Subway land reserve
- ▨ Specially organized streets restricting individual traffic
- ▨ Bus pavement
- ▨ Bus lane
- ▨ Bus lock
- ▨ Tramway-bus lane
- ▨ Park and Ride (P+R) parking system
- Existing light signals
- Planned light signals
- Existing relations at intersections
- Relations limited to busses
- Added intersection relations
- Cancelled relations
- Existing traffic direction
- Added traffic direction

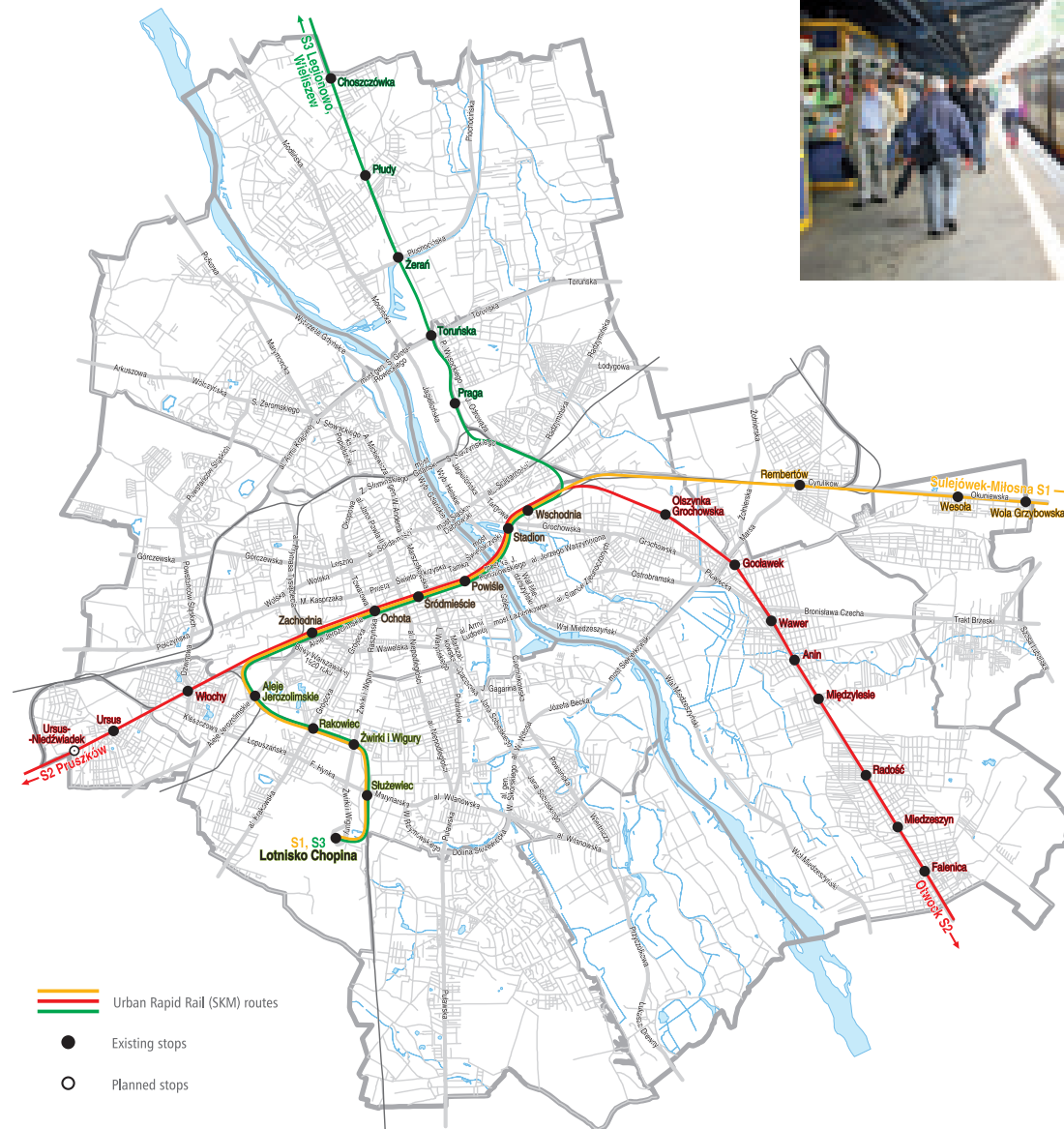


The contract for the building of the No. II subway line was signed on October 28, 2009. Construction will take only forty-eight months. Construction was launched in the second quarter of 2010.

Areas of the city encompassed by construction work connected with the building of the No. II subway line are subject to special coordination by city services to facilitate the efficient conducting of the project and the

minimizing of its negative effects on the day-to-day functioning of the city. Work is underway that is intended to prepare special traffic organization schemes for street intersections and segments as well as to evaluate the effects on traffic of the actions. These changes will be introduced in line with construction progress, while the effects of undertaken changes will be monitored on a running basis.

URBAN RAPID RAIL

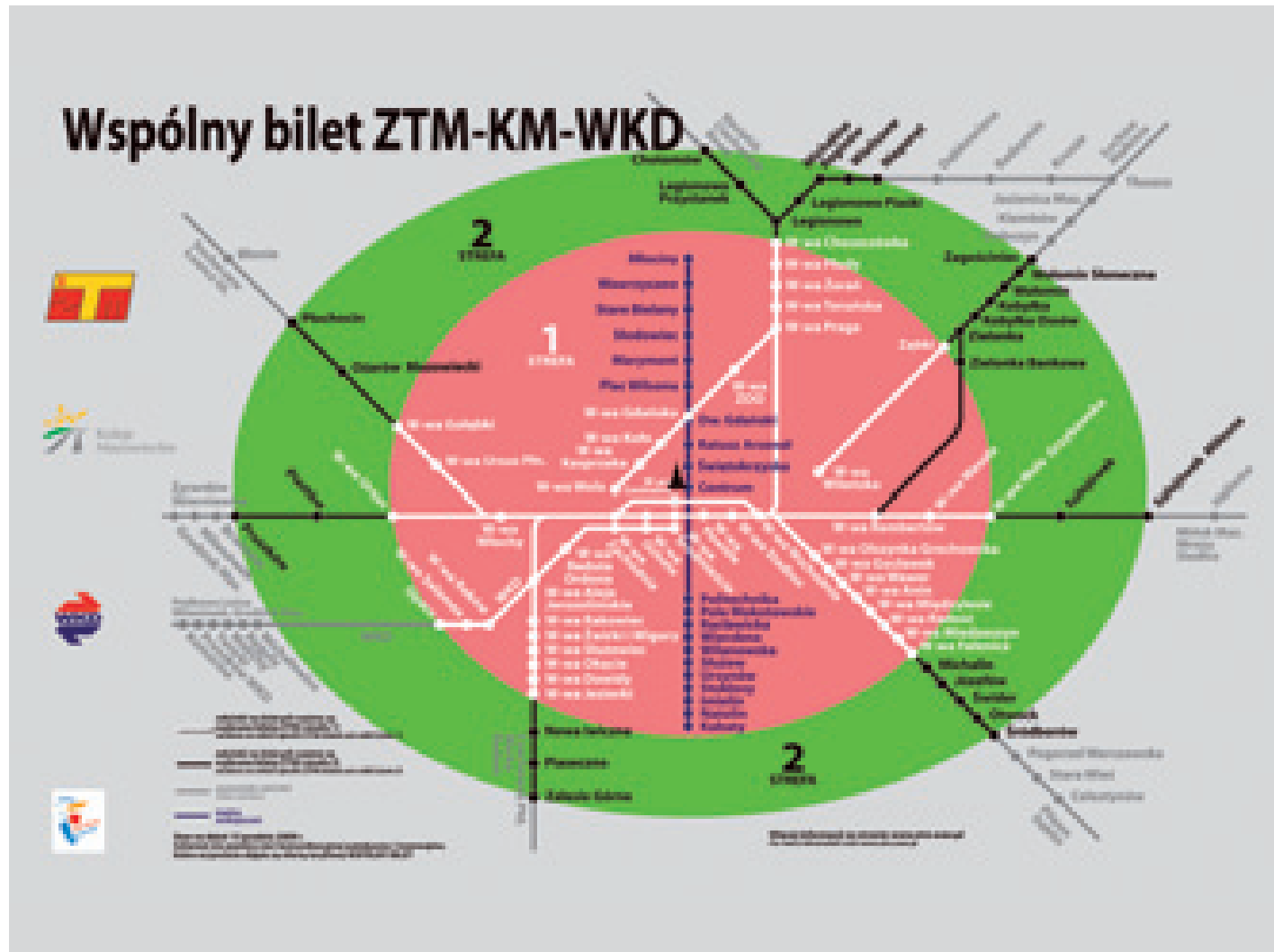


Modern and quick municipal rail will be of key importance in limiting incoming automobile traffic to Warsaw. The role of the railroad in servicing journeys in the suburban zone, access to Warsaw, and in trips around Warsaw (e.g. trips between districts) will grow.

Incorporating the railroad into Warsaw's rail transportation system will be possible thanks to the development of the potential of a rail carrier owned by Warsaw local government—Urban Rapid Rail (SKM). It will be the

task of the SKM to service transportation links that are important to Warsaw as well as set a high standard of railroad services (including by using modern rolling stock, punctuality, reliability, and safety). Currently, the SKM serves the Pruszków – Sulejówek (S2) and Warsaw – Legionowo – Wieliszew (S9) routes. Plans include expanding this offer to encompass other access lines to Warsaw, including the servicing of Okęcie airport.

WARSAW AGGLOMERATION RAIL



Warszawa Ursus Niedźwiadek



Warszawa Ursus Niedźwiadek



Warszawa Żwirki i Wigury



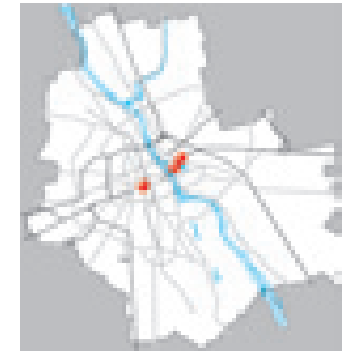
Warszawa Aleje Jerozolimskie

The adapting of the railroads to meet modern standards signifies the revitalization of existing railroad lines, stations, and stops, as well as their development, which will mainly involve the building of new stops in areas of concentrated sources and travel destinations along existing rail corridors. It is assumed that the modern rail system for Warsaw will provide:

- Travel times that are as short as possible,
- Considerable reliability in travelling,
- High frequency of vehicles and availability of seats,
- Attractive connections,
- Good accessibility to the railroad (short access time to the stations and stops, including the possibility of parking automobiles and bicycles as well as easy transfers),
- High standards (cleanliness, aesthetics, safety, and full access for the disabled) and passenger friendliness (modern information systems, easy to remember time schedules, improved service staff manners, and accessibility for older persons and the disabled).

RAILROAD STATION REVITALIZATION

Warszawa Centralna



Warszawa Wschodnia



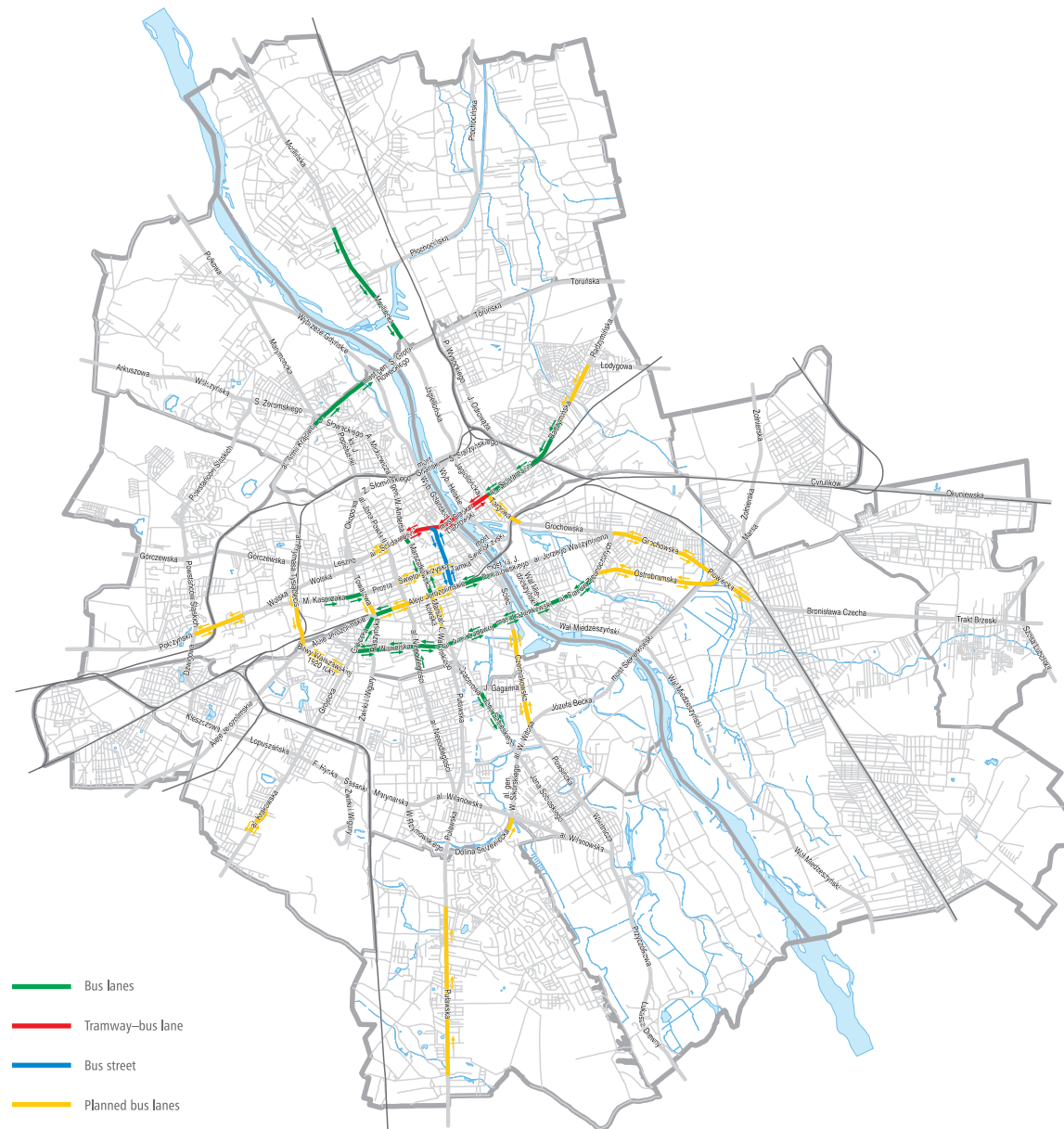
Warszawa Stadion



Transportation strategy assigns special importance to qualitative changes in the functioning of the main transfer nodes connected with the railroad system: Centralny [Central] Railroad Station – Śródmieście [Downtown] Railroad Station – Metro Centrum Subway Station, Zachodni [Western] Railroad Station, Wschodni [Eastern] Railroad Station, Gdański Railroad Station, Wileński Railroad Station

Changes will move in the direction of improving the standard of all transfers, including by shortening the time needed to transfer, shortening access distances, and increasing comfort and personal safety. Their objective will be to entice travelers in the Warsaw metropolitan area to benefit from a comfortable system of rail transportation.

BUS PRIORITY



Busses are the most frequently used means of transportation in Warsaw. A total of 47 percent of public transit commuters use busses every day. Warsaw's busses carry over 42 million passengers each month.

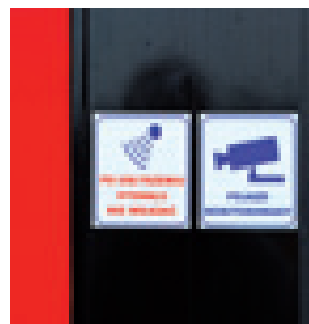
Basic plans relating to bus transportation are linked with:

- Facilitating the functioning of bus lines serving commuters traveling to the center of Warsaw as well as to transfer nodes catering to rail transportation;

- Strengthening the role of busses on routes not served by rail transportation (e.g. Modlińska, Puławska, and Radzymińska streets, and the Łazienkowska and Wiślostrada expressways).

This necessitates increasing the level of segregation of bus and automobile traffic (isolated bus lanes), facilitating bus traffic at intersections with light signals (priority green lights), and replacing the obsolete rolling stock with modern, low-floor, low-emission busses.

MODERN ROLLING STOCK



The competitiveness of mass transit necessitates a redoing of its image, including with respect to the type of rolling stock used. Requirements and expectations on the part of passengers are increasing in this respect. Open-space and low-floor trams and busses as well as modern railroad and subway cars are being introduced on a broad scale and this will continue.

The scale of this venture is defined by the size of the capital's transportation system. Almost 1,500 busses, 400 trams, 192 subway cars, and 18 Urban Rapid Rail (SKM) cars operate in Warsaw during the rush hour.

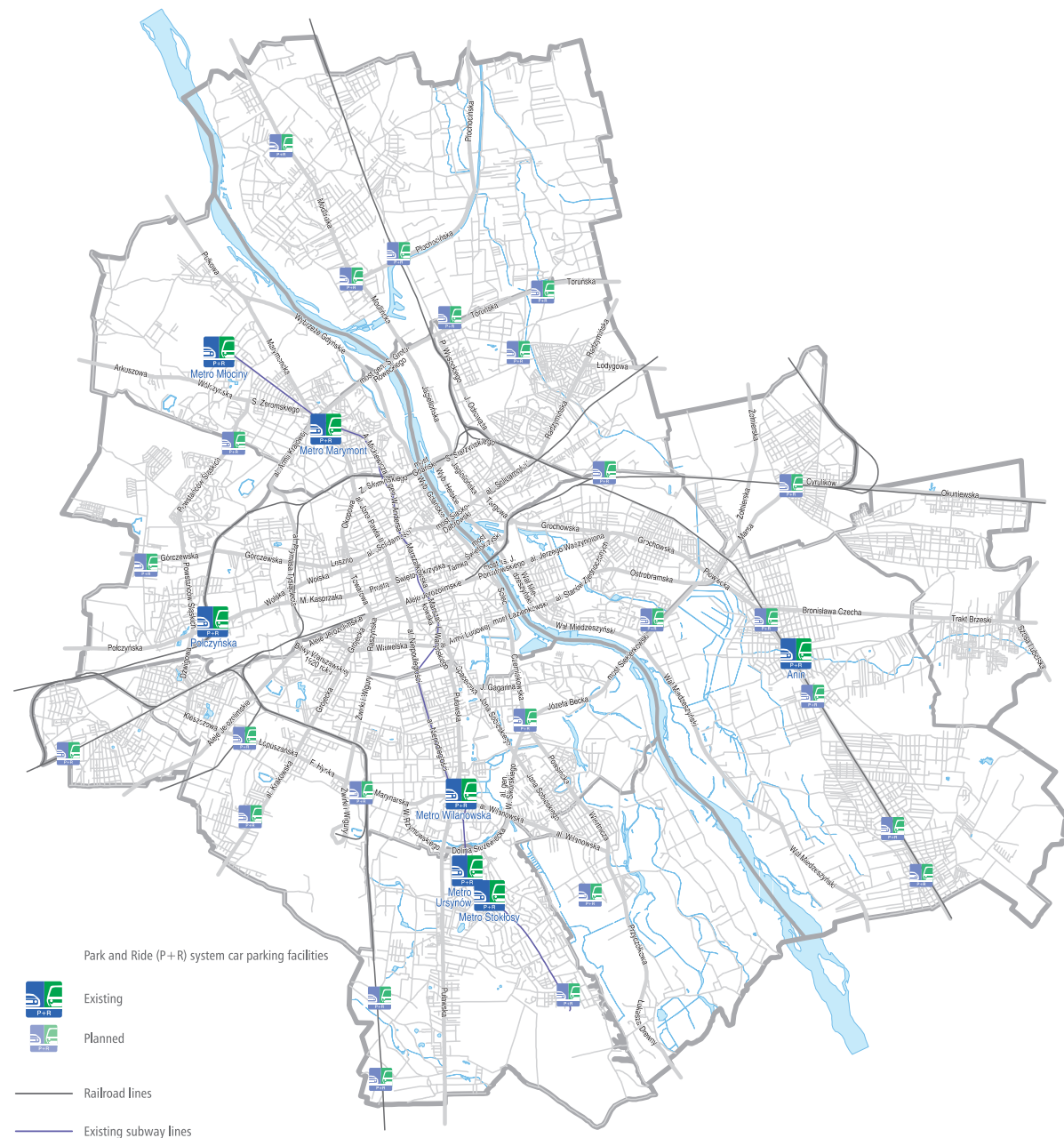
The standard of busses is already very high. A total of 73 percent of them are low-floor busses. The purchase of 660 new low-floor busses, equipped in air-conditioning and monitoring systems, is planned by

the year 2017. This will make it possible to phase out all obsolete Ikarus busses and adapt 100 percent of the rolling stock to meet the needs of senior citizens and the disabled.

Thanks to the signing of a contract for the purchase of 186 new trams, half of the operating trams will be modern and equipped in a low floor by the end of 2013.

Upcoming years also envisage the purchase of new trains for the Rapid Municipal Rail (SKM) system as well as thirty-five six-car subway trains.

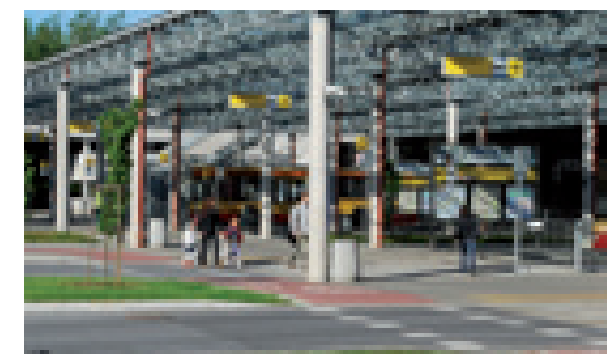
PARK AND RIDE



The "Park and Ride" system facilitates combination trips, where automobile and bicycle users on their way to the center of Warsaw transferring to modern, competitive mass transit can safely leave their automobiles and bicycles at P+R/B+R parking lots. Warsaw is the only place in Poland where such a system operates

(seven parking facilities) and it shall be further developed, mainly in the vicinity of subway stations, railroad stops and stations, and in the vicinity of major tramway nodes. It is assumed that over the upcoming years the "Park and Ride" system in Warsaw will consist of over thirty-five such parking areas.

TRANSFER NODE INTEGRATION



The transportation strategy assumes that a basic role in mass transit in Warsaw and its agglomeration will be played by trams, subways, and rail, supported by bus services in directions providing access to rail transportation. This signifies a growing number of journeys taking place with transfers and the need to organize efficient transfer nodes providing system integration.

Actions integrating transportation systems, important from the point of view of attracting the trust of the users of mass transit, shall apply to:

- Guarantying common tickets for all means of mass transit,
- Development of travel systems incorporating transfers from automobiles and bicycles to mass transit (P+R/B+R),
- The technical and functional modernization of transfer nodes with the intention of increasing comfort and shortening the time required for commuter transfers,
- Launching of passenger information systems (visual and audio) facilitating transfers.

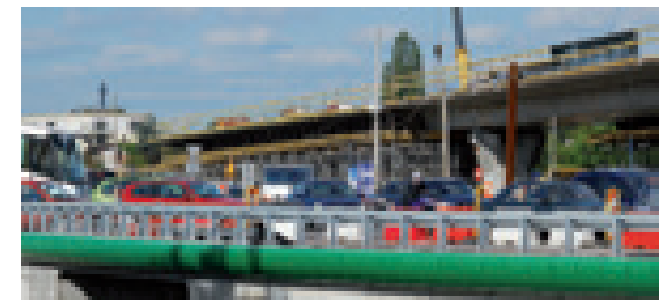
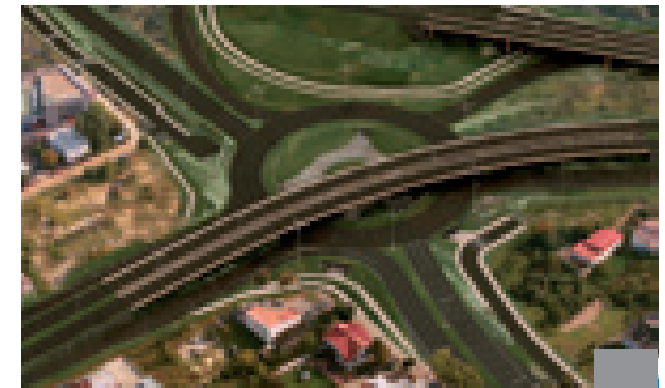
RING ROAD SYSTEM



Warsaw is developing a ring road construction program. It will facilitate travel among districts, decrease annoyance connected with truck traffic, and decrease the density of motor vehicles in the city center. The creation of the Śródmieście [Downtown] Bypass Route, encompassing Starzyńskiego Street – Słomińskiego Street – Okopowa Street – Towarowa Street – Raszyńska Street – Łazienkowski Expressway – Stanów Zjednoczonych Avenue – Wiatraczna Street – Nowo-Wiatraczna Street – Zabraniecka Street to the Żaba node is considered a priority, as is the Municipal Bypass Route consisting of the NS Route from the west, Marynarska Street – Rzymowskiego Street – Witosa Street and Siekierkowska Expressway from the south, the Olszynka Grochowska Expressway from the east, and the Północny [Northern] Bridge Route from the north.



THE MARSA STREET JUNCTION

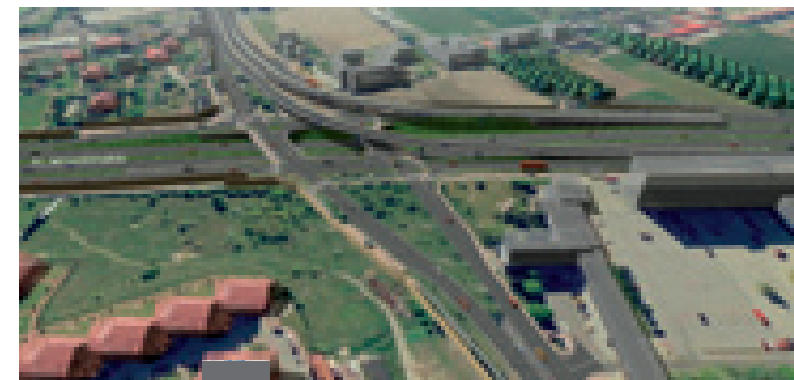
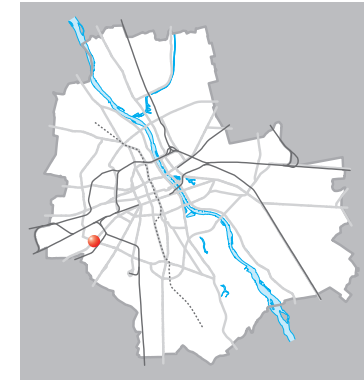


The Marsa Street junction project is the final phase of the Siekierkowska Expressway. The project involves the building of a large circle at the intersection of Płowiecka–Marsa–Ostrobramska streets with the Siekierkowska Expressway, the building of two overpasses connecting the Siekierkowska Expressway with Marsa Street, as well as construction of four pedestrian tunnels, acoustic screens, sidewalks, and bicycle paths.

Date of completion – turn of 2010 and 2011

Project cost – PLN 166,500,000

ŁOPUSZAŃSKA STREET JUNCTION



The Łopuszańska Street junction project encompasses the reconstruction of the intersection of Jerozolimskie Avenue and Łopuszańska Street making it collision free. It is a component of the comprehensive reconstruction of the entire Jerozolimskie Avenue route, from Prymasa Tysiąclecia Avenue to the limits of Warsaw.

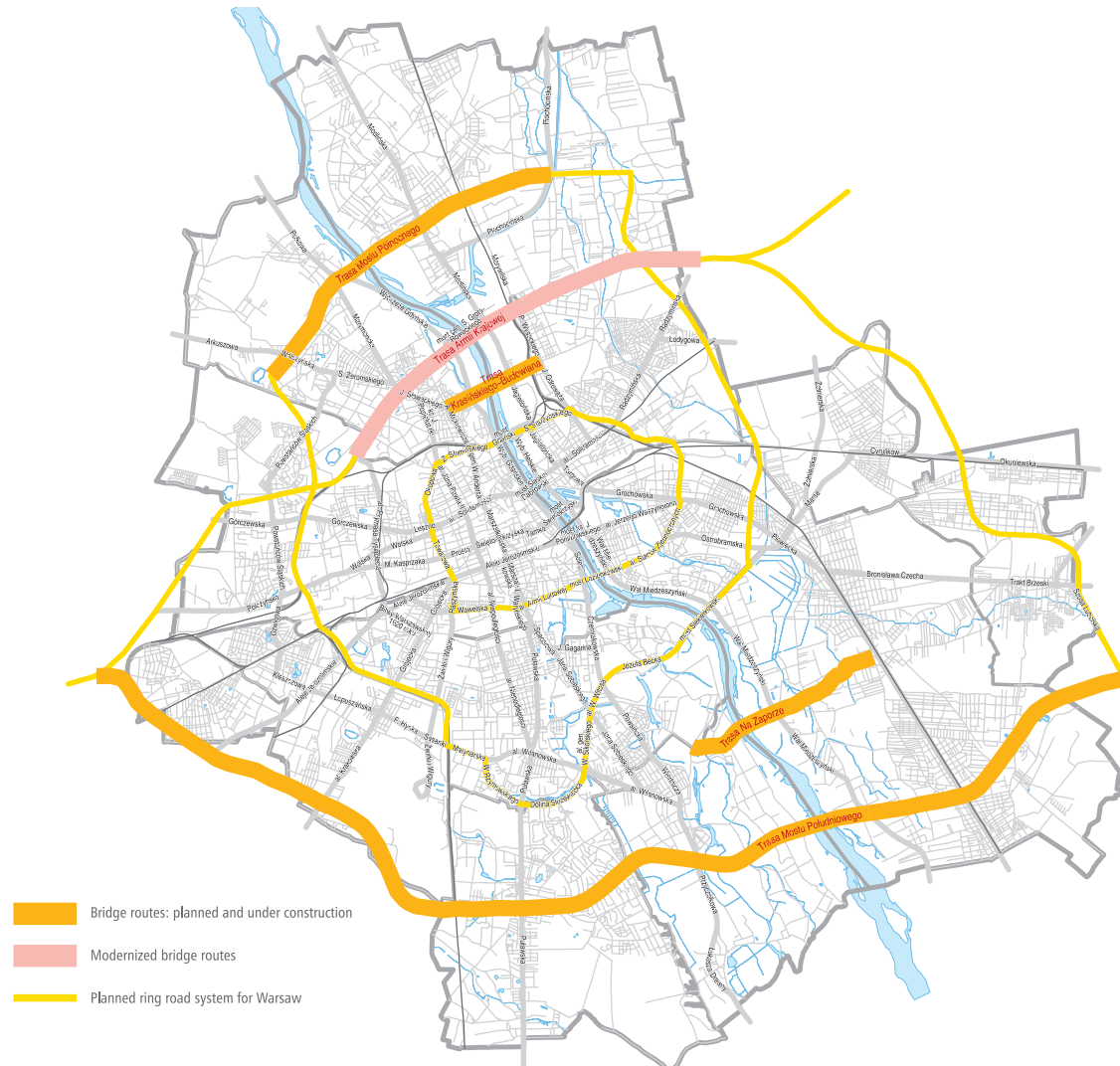
The project assumes construction of a circle at the intersection of Jerozolimskie Avenue and Łopuszańska and Kleszczowa streets as well as two overpasses of a length of 542 m and 509 m [1,778 feet and 1,670 feet]. One of them shall lead traffic from Łopuszańska Street to the left, in the direction of Jerozolimskie Avenue and

the Salomea – Wolica Expressway junction. The second will lead off Jerozolimskie Avenue to the right into Łopuszańska Street. Reconstruction of the intersection will provide for pedestrian and bicycle traffic with safeguards in the form of acoustic screens of a height ranging from four to six meters [13.1–19.7 feet].

Date of completion – May 2011

Project cost – PLN 160,000,000

BRIDGE ROUTES

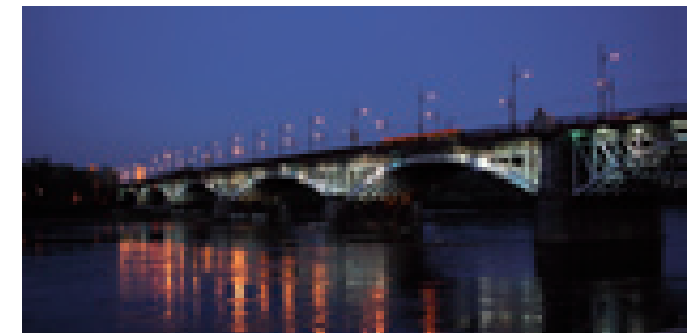
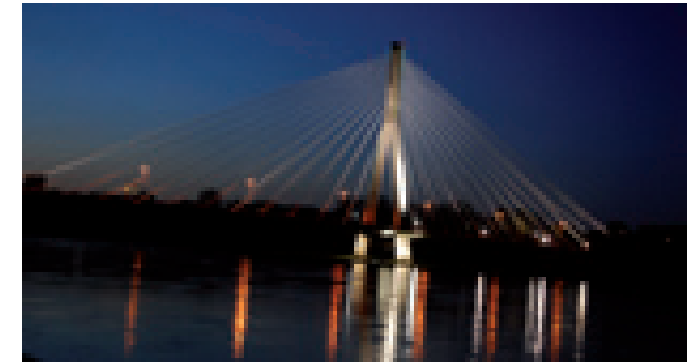


An important element of Warsaw's transportation system involves bridge routes. The transportation strategy assumes an increase in the number so as to facilitate the crossing of the Vistula River as well as better integration. To a significant extent, this will shorten journey lengths and will equalize differences in the attractiveness of left- and right-bank Warsaw.

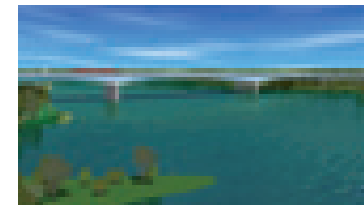
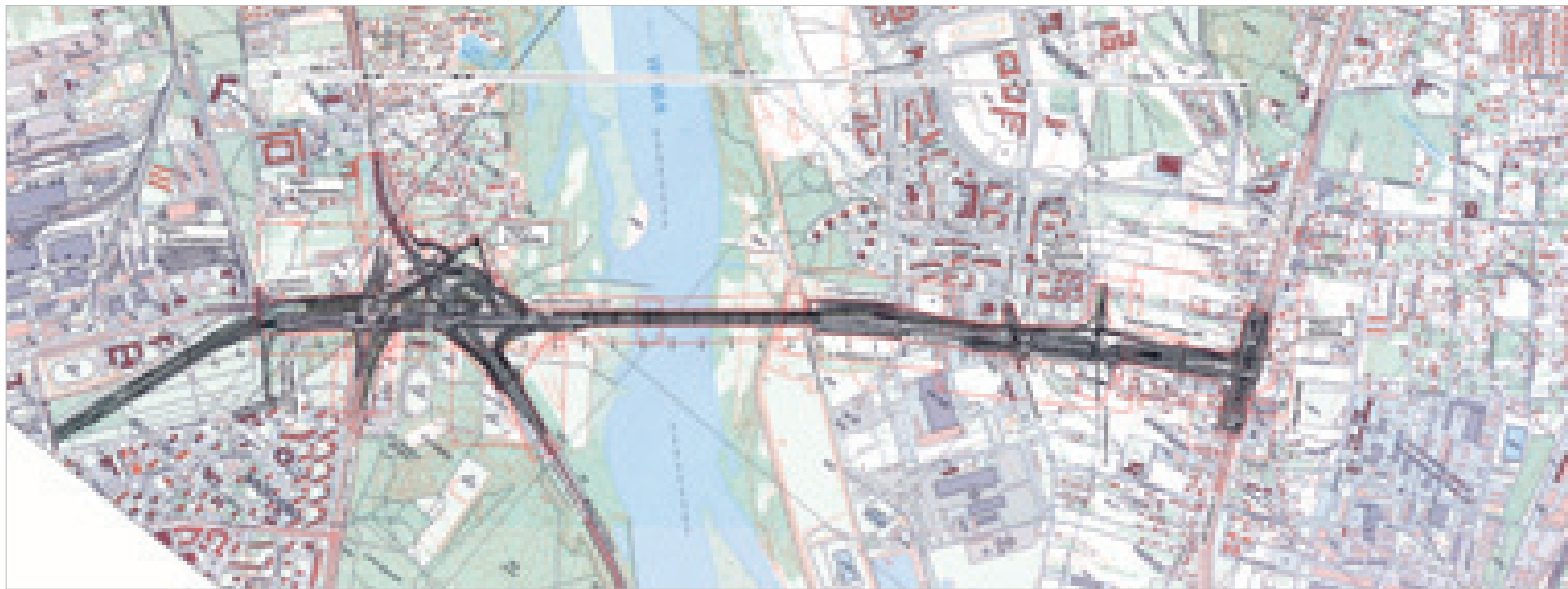
Północny [Northern] Bridge Route
 Planned route length – 4.15 km [2.6 miles]
 Bridge length – 795 m [2,608 feet]
 Bridge structural solution – steel combination
 Bridge type – road–tram with pedestrian and bicycle traffic
 Date of completion – 4th quarter of 2011
 Construction costs – PLN 976,618,384

Krasińskiego-Budowlana Bridge Route
 Planned route length – 3 km [1.9 miles]
 Bridge length – 722 m [2,369 feet]
 Bridge type – road–tram with pedestrian and bicycle traffic
 Construction costs (estimate) – PLN 480,000,000

Na Zaporze [On the Dam] Bridge Route
 Planned route length – 6.8 km [4.2 miles]
 Bridge length – 1,300 m [4,265 feet]
 Bridge structural solution – suspended over the mainstream and beam
 Pylon height – 15 m [49 feet]
 Bridge type – road with pedestrian and bicycle traffic
 Construction costs (estimate) – PLN 685,000,000

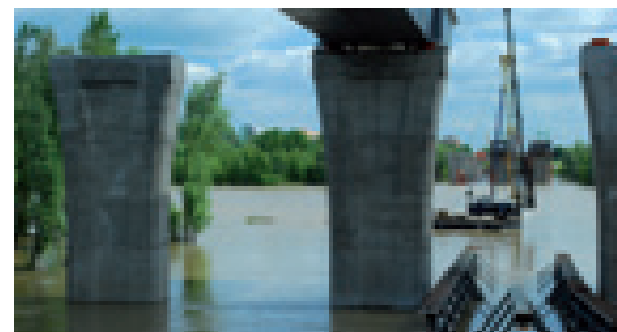


PÓŁNOCNY [NORTHERN] BRIDGE ROUTE

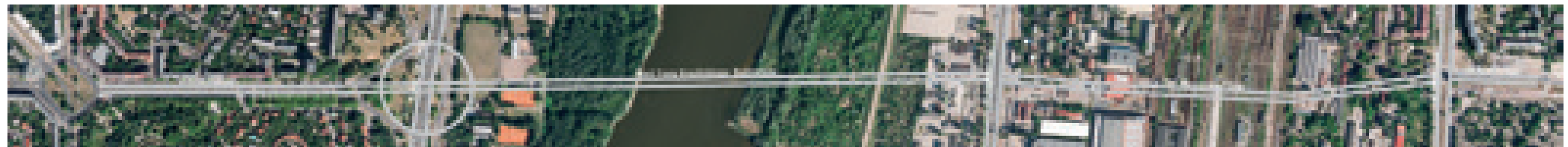
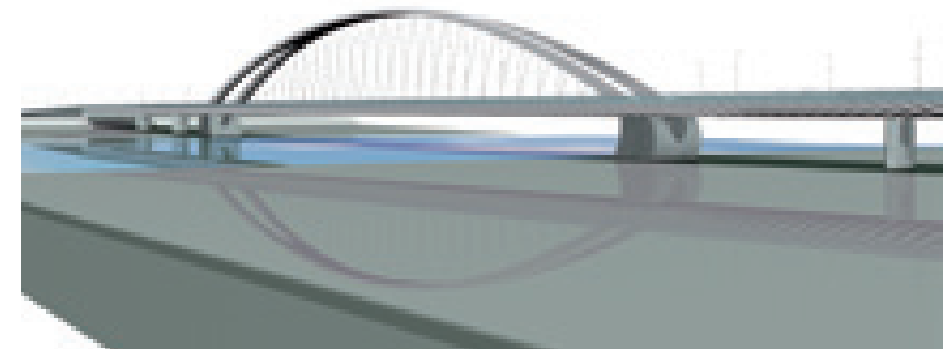
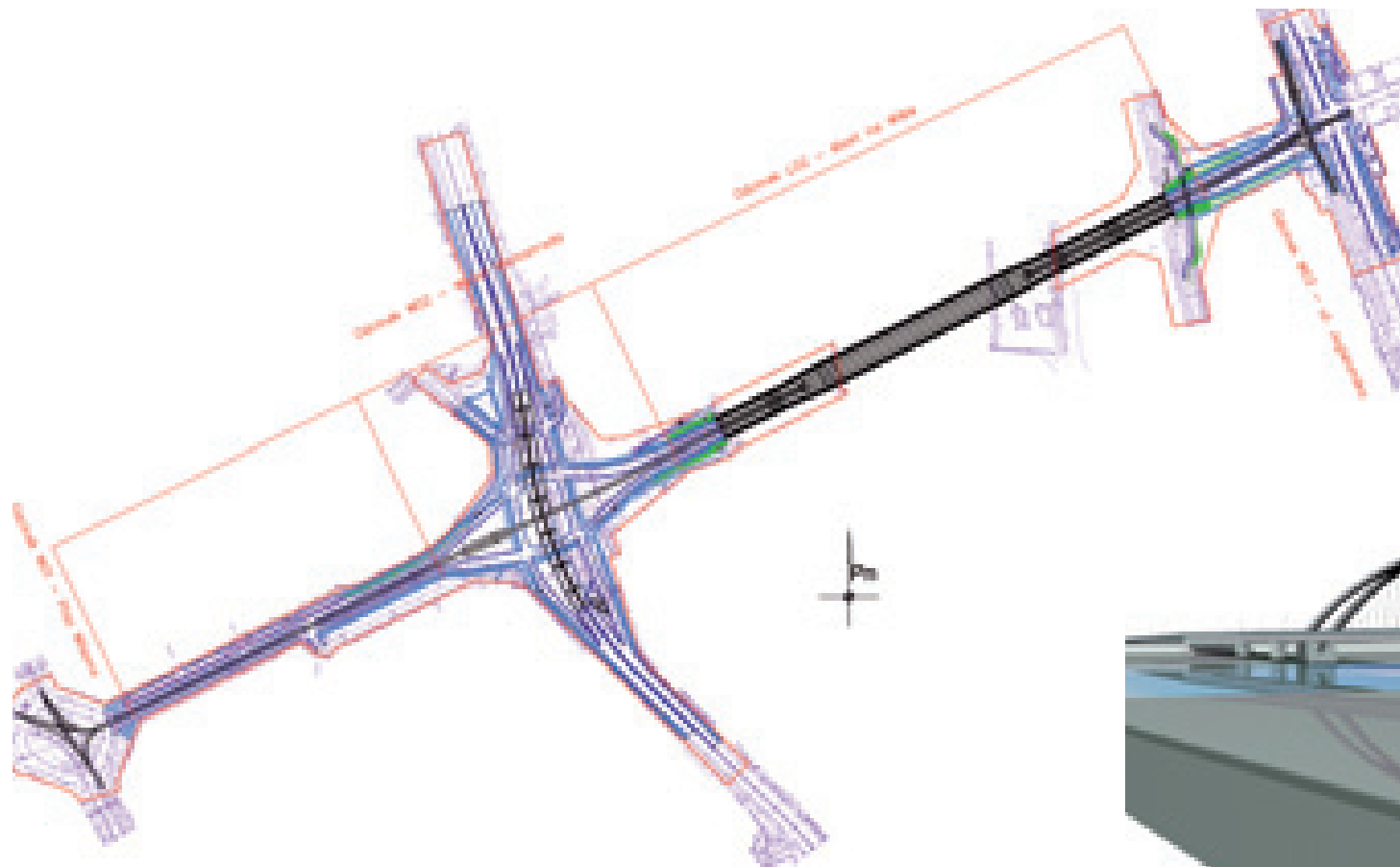


The Północny [Northern] Bridge Route will guaranty a connection between the districts of Białoleka (Modlińska Street) and Bielany (the Młociny transfer node) and will improve traffic conditions on the Grota-Roweckiego Bridge, which currently serves more than 150,000 vehicles per day! The route shall be equipped in two roadways with three traffic lanes each as well as a tramway route on the northern side and pedestrian and bicycle paths.

The Północny Bridge will have a length of approximately 795 m [2,608 feet] and will consist of three independent bridges (separate for the eastbound and westbound vehicle roadways, and for the tramway tracks, and pedestrian and bicycle paths). The bridge shall be a combined steel structure on pile foundations with a diameter of 150 cm [59 inches]. The longest of the ten bridge spans, the mainstream span, shall amount to 160 m [525 feet]. Two bridge supports shall be located in the river while the remainder will, in part, be on the flood plain. The height of the structure above the mainstream span shall reach to over nine meters [30 feet].



KRASIŃSKIEGO–BUDOWLANA BRIDGE ROUTE

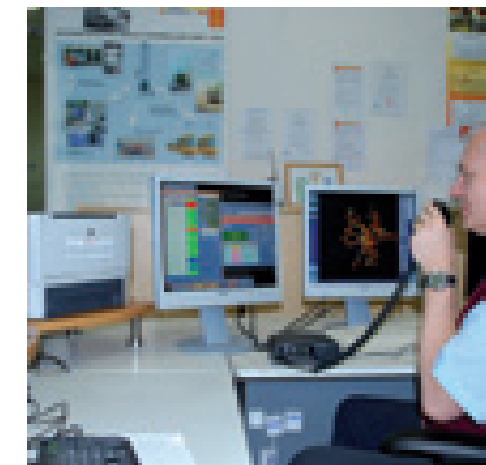
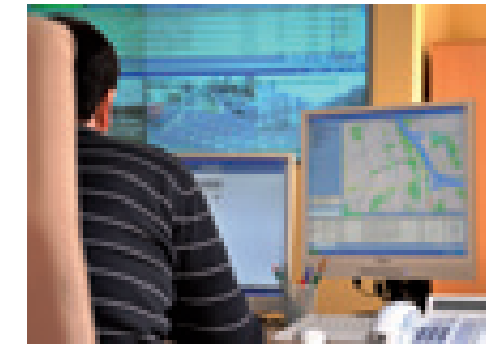
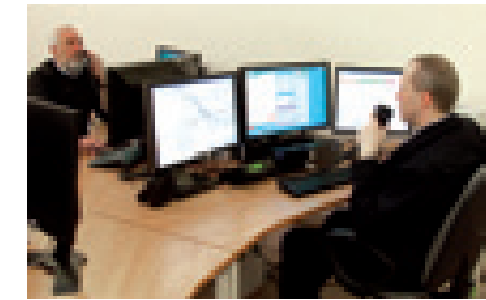
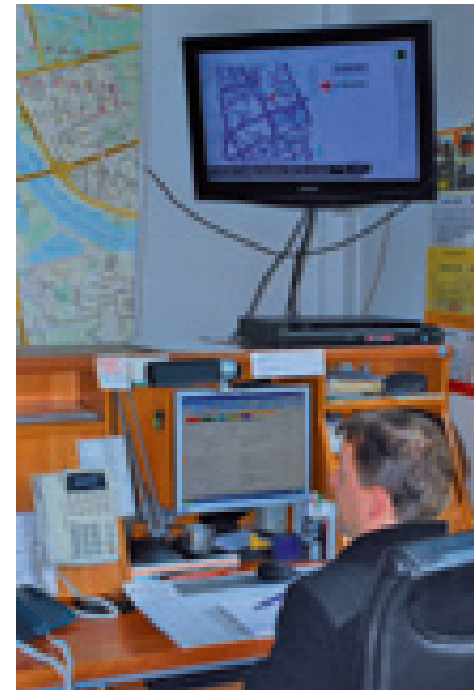


The Budowlana–Krasińskiego Bridge Route will be a new traffic connection linking Bielany and Żoliborz districts (the Wilsona Square area) with Targówek District (Odrowąża Street area). The vehicular route will have two roadways with two traffic lanes each, which shall be integrated with a tramway route whose target capacity shall be 5,500 passengers per hour. Journey times by tram from Wilsona Square to the Bródnowski Cemetery (intersection of Odrowąża and Budowlana streets) shall amount to seven minutes. Both sides of the route shall be provided in pedestrian and bicycle paths.

The new bridge across the Vistula River, inclusive of its approach ramps, shall have a length of 722 m [2,369 feet]. An interesting fact is that the main span of the bridge shall have a length of 246.6 m [809 feet] and is planned at the narrowest point of the Vistula River within the limits of Warsaw.

The bridge shall be built as an arch bridge. The composition of the volume of the main (the mainstream) span of the bridge shall consist of three basic elements. Two arches angled towards each other with closed cross-sections linked by a keystone from which the combination deck (steel box girders, cross bars, and a concrete slab) will be suspended. The rods used to hang the deck shall be hooked up to the arches creating the impression of two “harps” angled towards each other. The central part of the span shall be slightly widened in order to form a scenic overlook where pedestrians and cyclists will be able to admire the panorama of Warsaw.

MANAGEMENT SYSTEMS

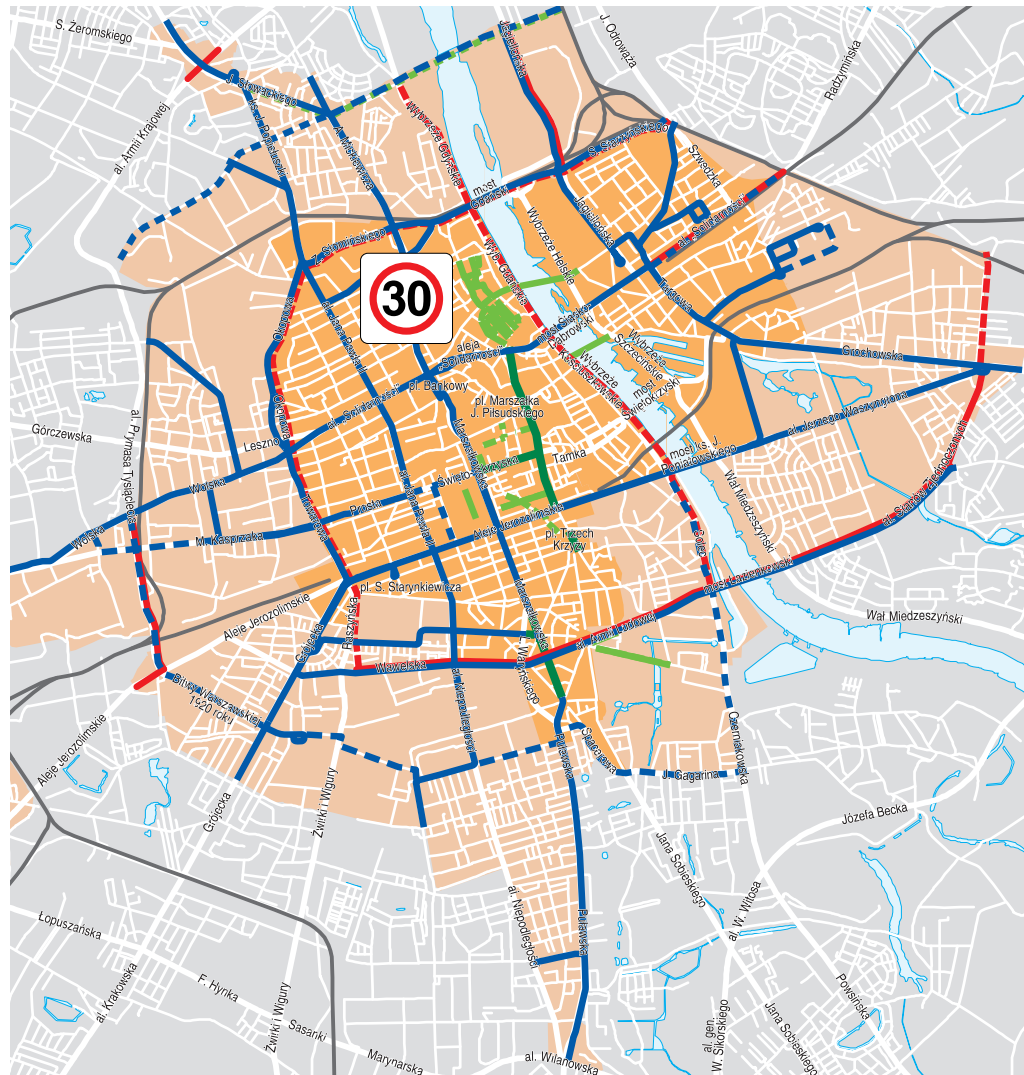




Warsaw's contemporary transportation system requires the application of modern management methods. Currently, mass transit operations are overseen by two centers—the subway control center and the tramway control center. This allows for satellite-based supervision over tram locations and automatic monitoring of their punctuality, while in the case of Jerozolimskie Avenue, information regarding tram arrival times at the stops (electronic passenger information system, ultimately to encompass all modernized and newly built tramway routes) is provided.

Better and more efficient functioning of Warsaw will be guaranteed by the currently developed integrated traffic management system. It has already been introduced along Jerozolimskie Avenue and the Powiśle. It will encompass the whole of Warsaw making possible:

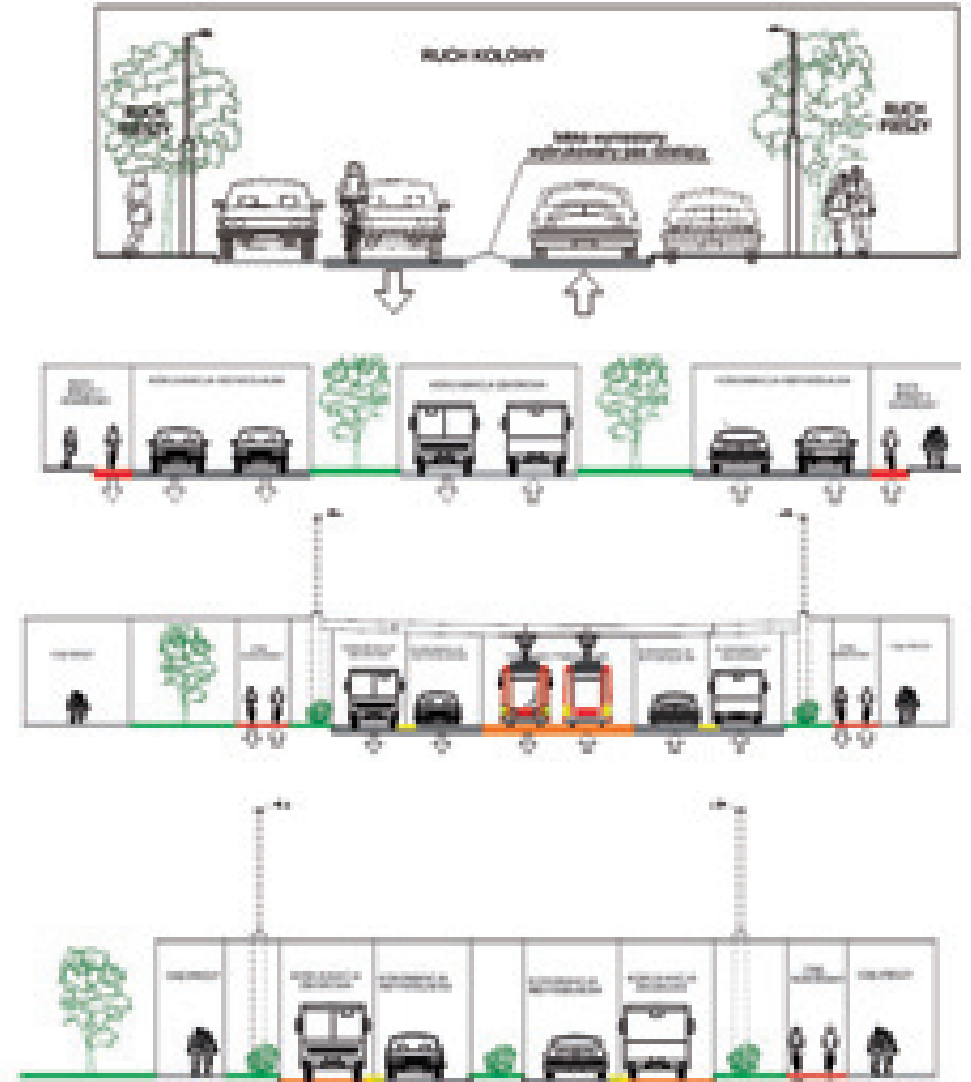
- Modern control over light signals,
- Traffic supervision at intersections and on transportation routes,
- Quick reactions to emergencies (accidents, collisions, and technical failures),
- Running information for drivers regarding the current traffic situation in the city,
- Priority for busses, trams, and emergency services.

DOWNTOWN TRAFFIC ORGANIZATION



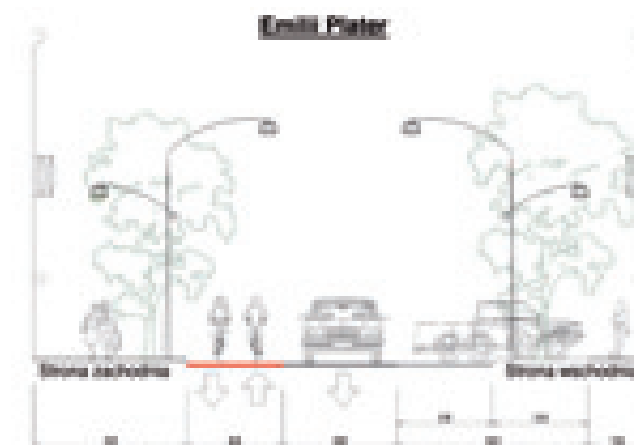
- | | | | |
|---|--|---|--|
|  | Streets designated exclusively for pedestrian and bicycle traffic – existing and planned |  | General access streets with the potential for speeds of more than 50 km/h – existing and planned |
|  | Streets designated exclusively for pedestrian and bicycle traffic as well as mass transit – existing and planned |  | Streets with a maximum speed limit of 30 km/h |
|  | General access streets with priority for mass transit – existing and planned | | |

The basic role in servicing downtown Warsaw will be played by mass transit. Automobile traffic will be decreased and restrictive regulations will also apply to freight traffic so as to limit its related annoyance. Space up till now used by moving and parked vehicles shall be gradually taken over by pedestrians and cyclists.



This signifies actions such as the exclusion of certain streets from vehicular traffic, establishing grade-level pedestrian crossings (including at locations where underground passages are currently functioning), and putting order to the parking of vehicles. Clear traffic organization principles shall be introduced that define principles governing the co-existence of pedestrian, bicycle, mass transit, and automobile traffic.

EMILII PLATER–NOAKOWSKIEGO BICYCLE ROUTE



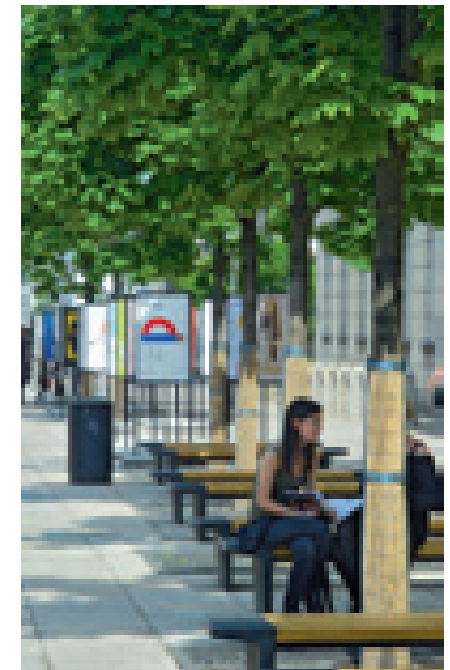
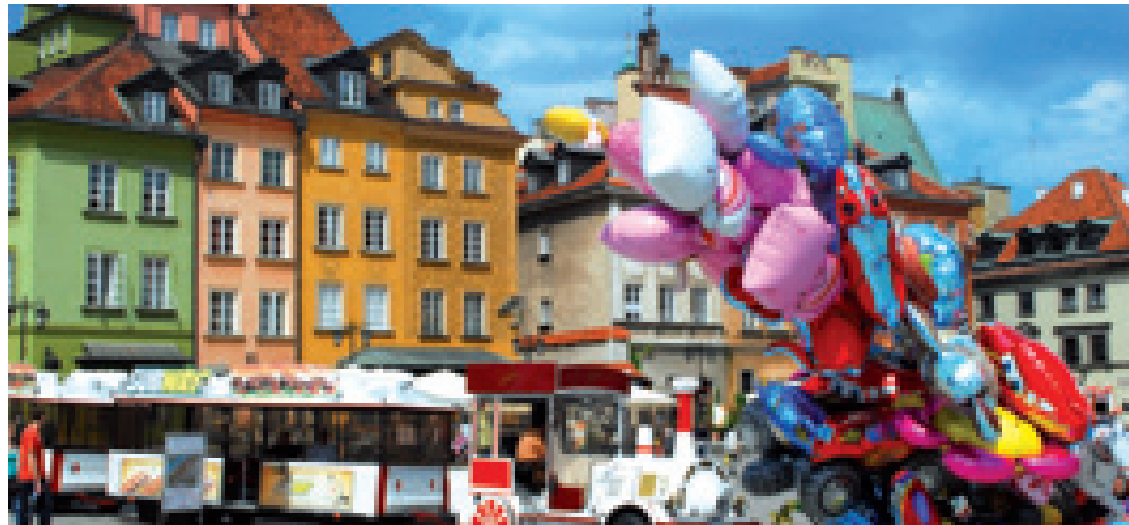
An example of a project introducing a facilitating of bicycle traffic is the concept of a two-way bicycle path on the western side of Emilii Plater and Noakowskiego Streets.

The new bicycle route will have a length of approximately 700 m [2,297 feet] and will link the strict center of Warsaw with the Warsaw University of Technology campus in the area of Politechniki Square. Its creation

will foster travel by bicycle through downtown Warsaw, and favor daily trips between the college facilities and the Warsaw Śródmieście and Centralny railroad stations.

Ultimately, the siting of four public bicycle rental outlets is planned along the bicycle path—Śródmieście Railroad Station, Nowogrodzka Street, the Department of Transportation Building of the Warsaw University of Technology, and the Warsaw University of Technology Main Building.

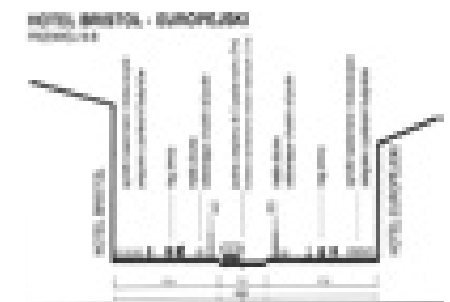
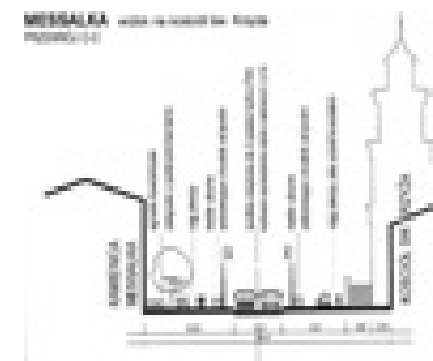
THE ROYAL WAY



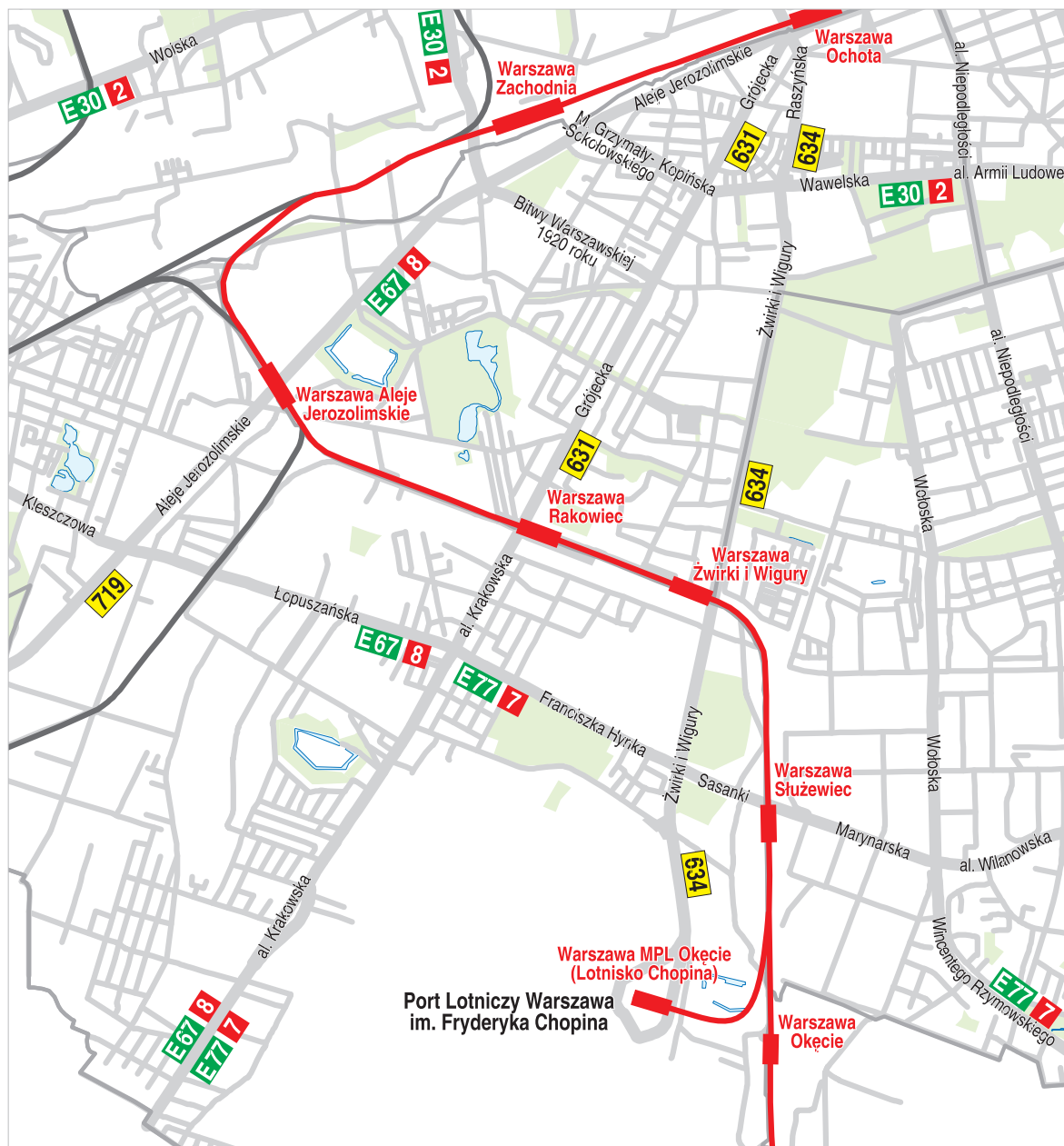
The Royal Way is one of Warsaw's calling cards. It is an element of the "city salon." The major overhaul of Krakowskie Przedmieście Street over the years 2004–2008 was intended to improve the standard of public space on this street linking the space of the renewed Nowy Świat Street with the Old Town, increasing attractiveness for tourists, and restricting vehicular traffic by introducing restricted traffic zones.

A spatial subdivision of Krakowskie Przedmieście Street into segments of varied use has been assumed:

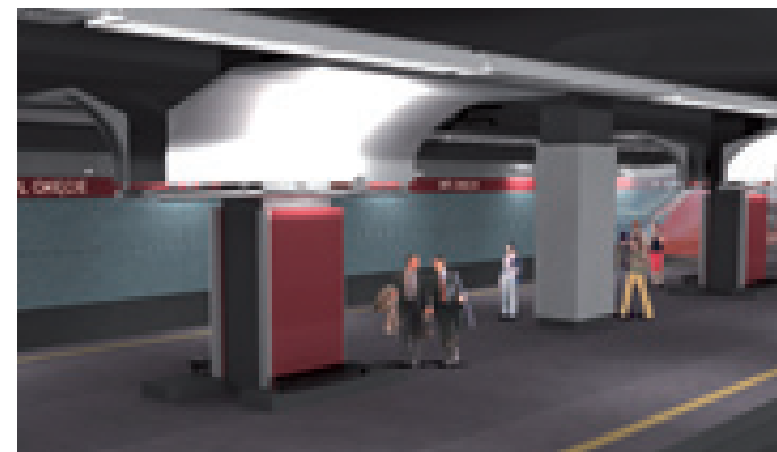
- Segment 1: Zamkowy [Castle] Square – Miodowa Street, an area completely free of vehicular traffic;
- Segment 2: Miodowa Street – the Carmelite church, a widened Krakowskie Przedmieście Street, including Hoover Square, the recreated Bernardine Marketplace, and the planned square in front of the Carmelite church;
- Segment 3: The Carmelite church – Królewska Street, the street section with representative buildings, including the Presidential palace, the Ministry of Culture and National Heritage building, the Bristol Hotel, and the Europejski Hotel;
- Segment 4: Królewska Street – Copernicus Monument, the academic section of the Royal Way with buildings of the University of Warsaw (UW), Academy of Fine Arts (ASP), the Polish Academy of Sciences (PAN), and two squares—on the axis between the University and Academy and around the Copernicus Monument;
- Segment 5: The Copernicus Monument – Świętokrzyska Street, a fragment of Nowy Świat Street that is narrow.



OKĘCIE AIRPORT COMMUTER SERVICES



The continuous expansion of Okęcie Airport necessitates significant improvement in its transportation services. Construction is underway on a new road system (the southern S2 expressway from the Konotopa Node to Puławska and Poleczki streets and from Puławska to Osmańska streets) and a railroad line guarantying the linking of the terminal (underground railroad station) with the center of Warsaw. Airport services will be guarantied by a modern Urban Rapid Rail (SKM) system on the Legionowo – Warsaw Gdański Railroad Station – Okęcie and Sulejówkę – Warsaw Śródmieście Railroad Station – Okęcie lines. It is assumed that trains shall leave from the airport every fifteen minutes.



ROAD TRAFFIC SAFETY

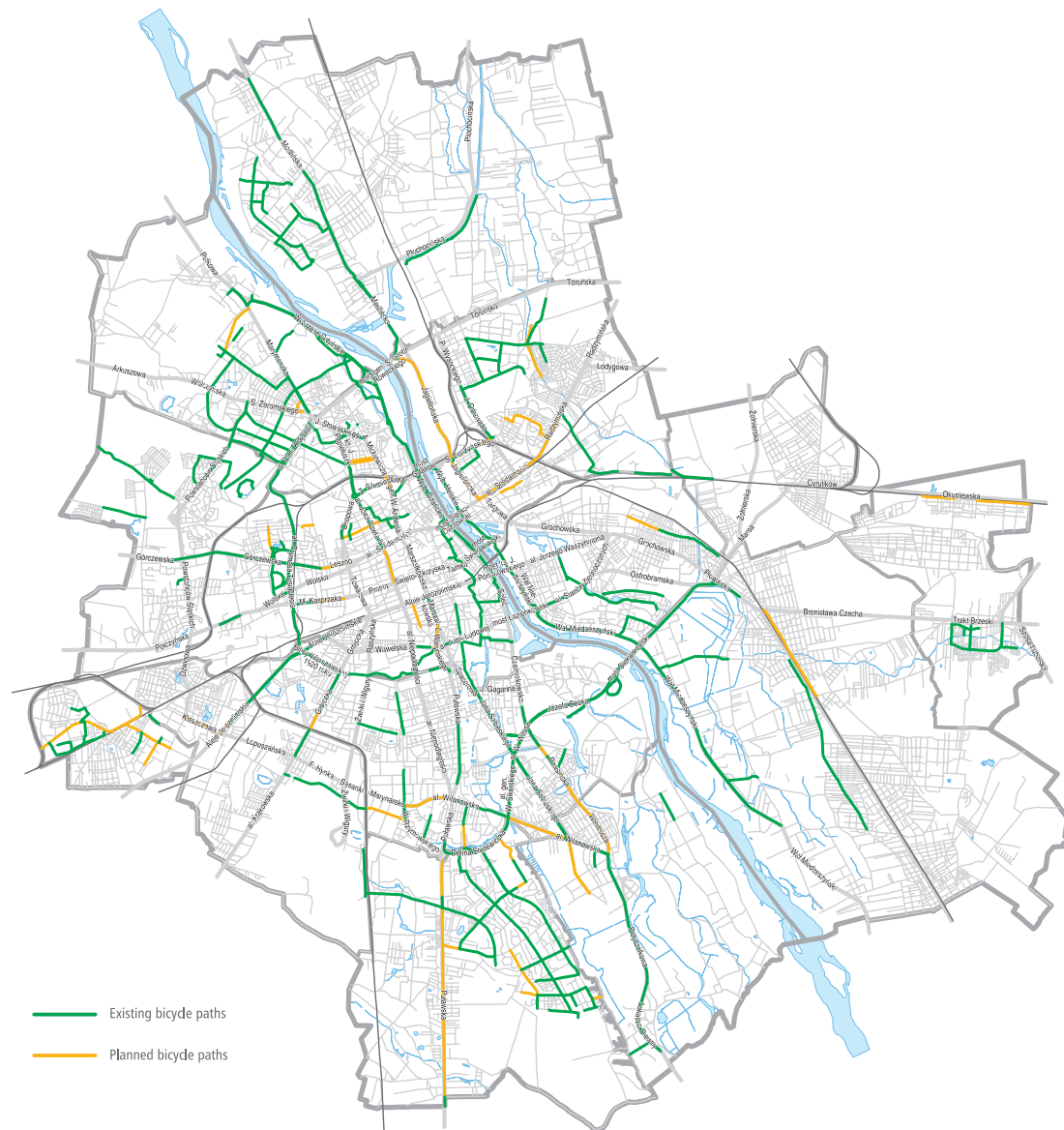


There were 983 accidents and 1,929 collisions in Warsaw in 2009. Ninety-six people died and 1,125 were hurt. A total of 530 pedestrians suffered. The most frequent cause of accidents is failure to adjust speed to traffic conditions. The state of traffic safety in Warsaw is improving with every passing year, however these numbers force the undertaking of radical action. The transportation strategy assumes that improved safety will be the result of:

- The introduction of restrictions on automobile traffic in the city center in combination with the adapting of streets and intersections for safe movement by pedestrians and bicycles;
- Expanding the speed monitoring system;
- Reconstruction of dangerous locations;
- Pedestrian, bicycle, and automobile traffic segregation;
- Oversight of planned transportation projects in terms of their guarantying traffic safety (solution audits);
- Support of actions aimed at using safety equipment in automobiles (seat belts and children's seats).

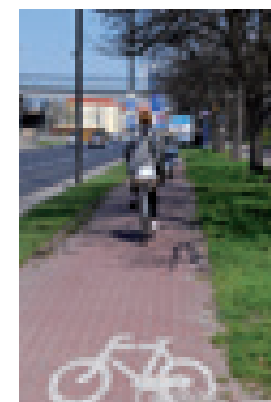
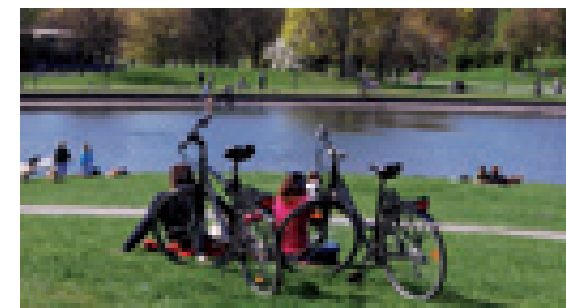
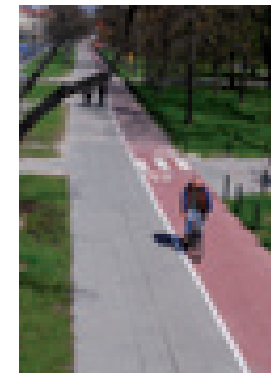


DEVELOPMENT OF BICYCLE PATHS

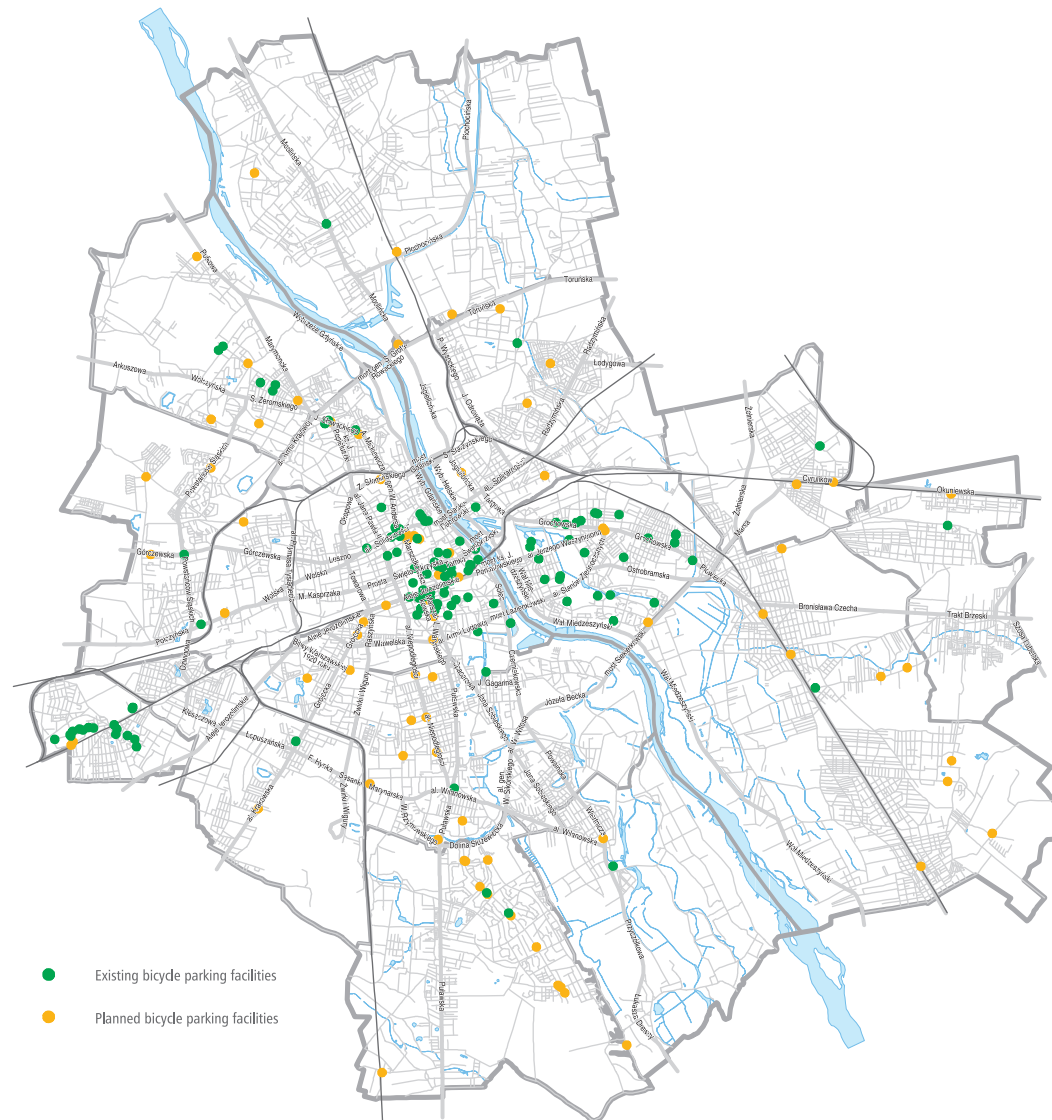


Among all Polish cities, Warsaw has the largest network of bicycle paths—275 km [171 miles]. The building of successive segments is planned so as to secure quick, efficient, and safe access by bicycle to all destinations located in the city. In such cases, the bicycle will not only be used during weekends, but on a daily basis for travelling to work and school.

In line with the bicycle traffic development program prepared by City Hall, over 50 km [31 miles] of new bicycle paths will be built over the upcoming two years. Actions will be aimed at the development of infrastructure at locations where there is the greatest demand on the part of users as well as the improvement of network cohesion.

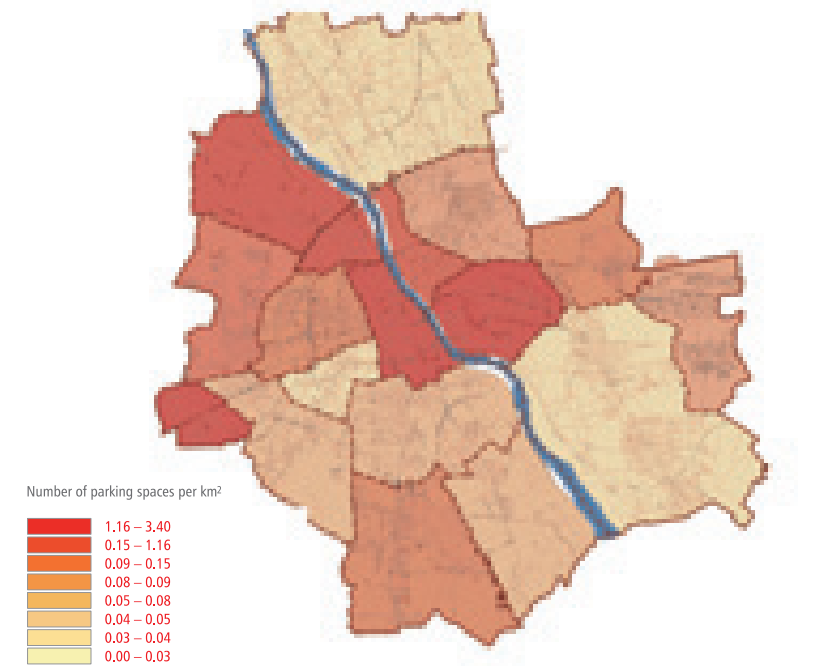


BICYCLE PARKING

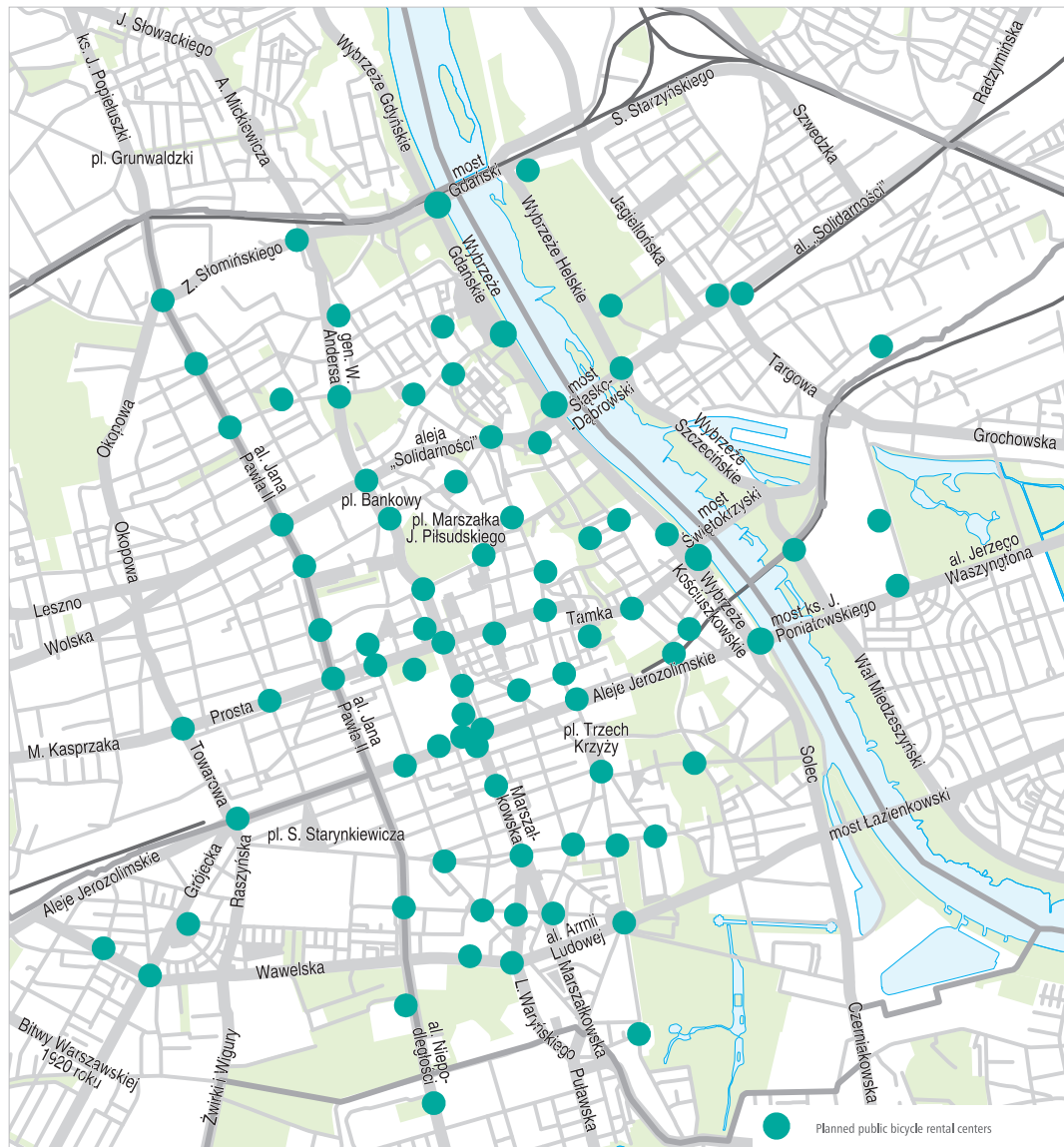


Convenient and safe use of bicycles will require the creation of a dense network of municipal bicycle parking facilities. Currently, there are almost 200 in Warsaw that guaranty conditions for safe fastening for approximately 1,000 bicycles.

In line with the bicycle traffic development program, there will be an intense expansion of bicycle parking facilities. Parking facilities will be established near subway stations, tramway and bus loops, and all facilities of City Hall and district government as well as public buildings (schools, culture centers, libraries, museums, etc.). It is assumed that an additional ninety parking facilities for approximately 2,100 bicycles will be built over the next two years.



PUBLIC BICYCLE SYSTEM



The public bicycle system (SRP) project assumes the building in Warsaw of a network of fully automated general-access bicycle rental locations. The goal of the system is to entice people to use bicycles for travel between mass transit nodes (train stations and subway stations) and their morning destinations (work and study locations) as well as for journeys to the center of the capital. The public bicycle system will also be a solution increasing the tourist attractiveness of Warsaw. Initially, the public bicycle system will be established in the downtown section of the city as well as on access routes to the No. 1 subway line, linking college campuses in the north and south of Warsaw.

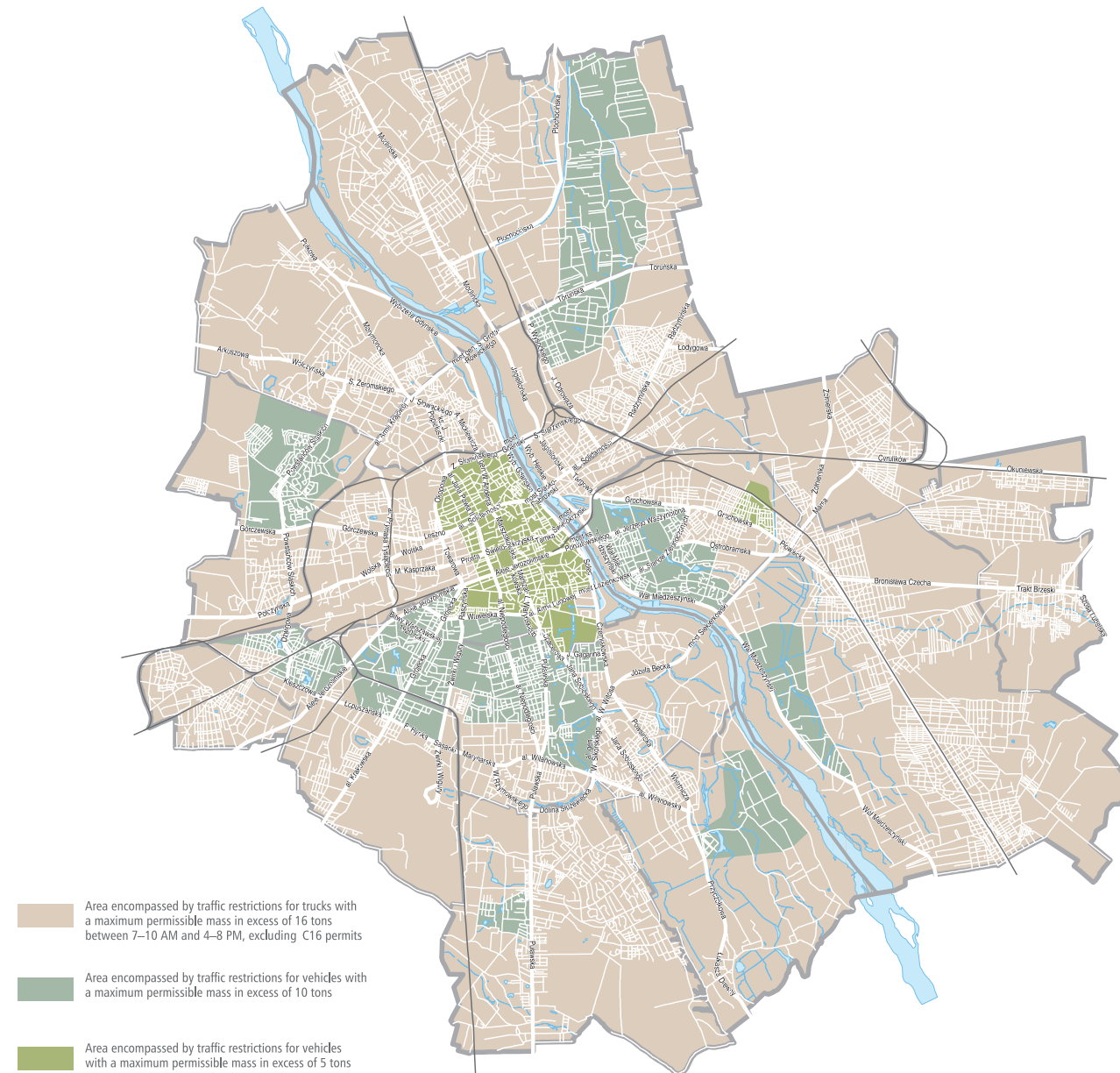
The public bicycle system will consist of 120 rental locations equipped in 2,000 bicycles designed especially for Warsaw. The bicycles will be available 24-hours a day over the spring–summer–autumn sea-

The Public Bicycle Project – Olaf Morelowski, Thesis, Faculty of Architecture of the Warsaw University of Technology (www.olafko.com)



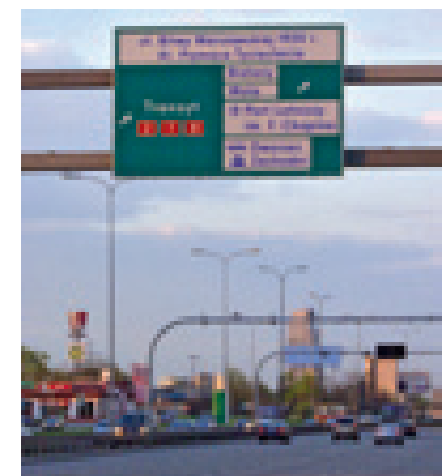
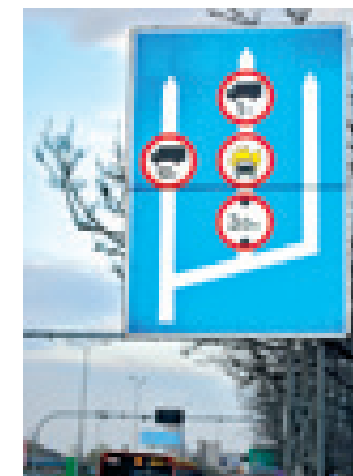
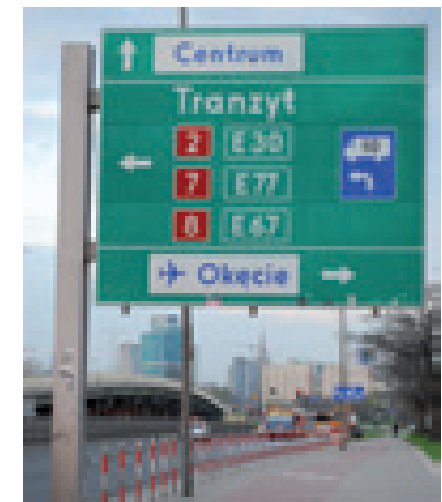
sons. Use of the system will be very simple. The renting of a bicycle will take place following registration of the user in the system and his or her identification. This occurs following the reading in by a special control panel of a Warsaw City Travelcard (WKM), an Electronic Student ID (ELS), or credit card. It will also be possible to rent a bicycle using a special public bicycle system (SRP) electronic card or an Internet account with PIN code in the system. Registration in the system and indicating which bicycle shall be rented (inputting its number) shall take just a few dozen seconds. Worth stressing is that short trips by public bicycle (up to twenty minutes) shall be free! A large number of rental bicycles shall be available in the downtown area every 300–400 m [984–1,312 feet], which will facilitate easy access to bicycles and the convenience of using the public bicycle system (SRP).

RESTRICTIONS ON FREIGHT TRAFFIC



Special organization of truck traffic is in force in Warsaw. The city is subdivided into access zones for vehicles of defined allowable total mass as well as indicated routes.

A further decrease in road system loading with annoying truck and delivery vehicle traffic is planned through the modernization of the cargo transportation system, the development of logistic centers, and the application of modern delivery traffic organization methods.



EDUCATION AND MOBILITY



The ABCs of Safety Campaign

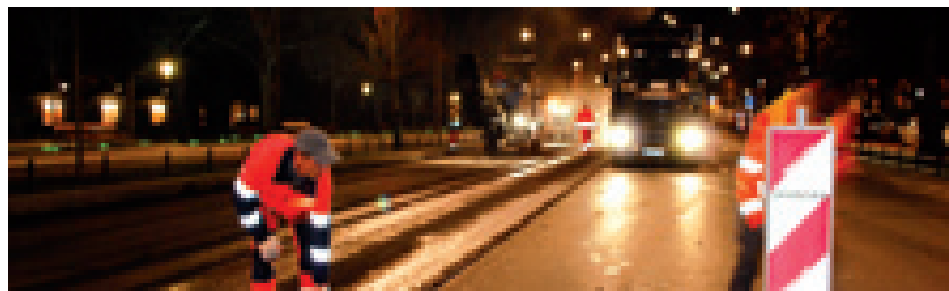
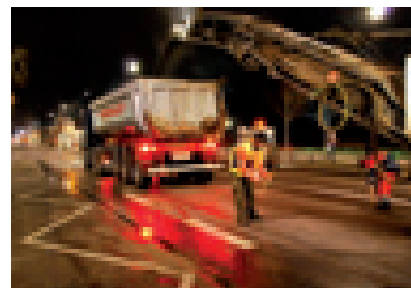
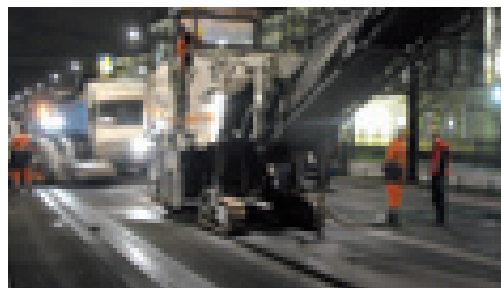


Major importance is assigned to the application and enforcement of the law as well as the educating of transportation system users, especially children and young people, in the transportation strategy.

Educational programs aimed at teaching law-abidance as well as encouraging the use mass transit and bicycles will be implemented. These programs will present the benefits and advantages of environmentally-friendly behavior in using the city's transportation system. Of primary importance will be getting the youngest inhabitants to travel without using automobiles.

One method shall be the development of individual transportation plans (as well as mass transportation plans for companies and groups) within the framework of which the potential for limiting numbers and distances of automobile trips, especially to the city center, will be identified for people living and working in Warsaw.

STREET RENOVATION



One of the priorities of the strategy is a decided improvement in the technical state of streets and facilities. The renovation of 70 km [43.5 miles] is planned for the year 2010 alone. A total of PLN 70,000,000 is earmarked for this purpose. In an effort to decrease the annoyance for Warsaw's inhabitants, a technique for conducting renovation work over short periods of time and weekends, has been successfully applied. There is then less disruption to traffic and daily travel to work is not impeded.

The efforts undertaken are bringing in positive effects and are seen by users. Opinion polls conducted on Warsaw's residents indicate that:

- A total of 92 percent consent to temporary difficulties related to renovation work improving the quality of roads in their area of residence,
- A total of 51 percent note that the technical state of Warsaw's streets is improving.

INVESTMENTS AND EUROPEAN UNION PROJECTS



TRANSPORTATION PROJECTS CO-FINANCED OUT OF EUROPEAN UNION FUNDS IN THE YEARS 2007–2013, WITH STATED VALUES

- Construction of the S2 express route, investor: General Directorate for National Roads and Motorways (GDDKiA); PLN 1,514,270,000
- Construction and reconstruction of the S8 express route, investor: GDDKiA; PLN 1,001,880,000
- Warsaw's Southern Ring Road (S2 express route), investor: GDDKiA; European Union co-financing: PLN 2,095,560,000
- Construction of the S8 express route, investor: GDDKiA; PLN 2,431,021,182.66
- Construction of the Północny [Northern] Bridge Route, investor: City of Warsaw; PLN 374,599,231.59
- Jerozolimskie Avenue modernization – Construction of the Łopuszańska Street / Kleszczeowa Street junction, investor: City of Warsaw; PLN 168,000,000
- Modlińska Street reconstruction, investor: City of Warsaw; PLN 87,313,531.90
- National Route No. 2 and Siekierowska Expressway junction construction, investor: City of Warsaw; PLN 118,104,950
- Modernization of the Powązkowska Street overpass spanning the PKP railroad tracks, investor: City of Warsaw; PLN 25,998,335.72
- Construction of a second carriageway for Wilanowska Avenue, investor: City of Warsaw; PLN 45,356,056.84
- Nowolazurowa Street construction, investor: City of Warsaw; PLN 125,350,000
- Reconstruction of Poleczka Street, investor: City of Warsaw; PLN 32,492,811.15
- Gwiaździsta Street reconstruction, investor: City of Warsaw; PLN 7,313,846.29
- Design and construction of the central segment of the No. II subway line, investor: City of Warsaw; PLN 2,954,910,000
- Phase II of the "Park and Ride" parking facility, investor: City of Warsaw; PLN 43,605,000
- Modernization of the Wileński Station – National Stadium – Washington Circle tramway route, inclusive of the purchase of thirty low-floor trams, investor: Warsaw Tramway Ltd.; PLN 151,520,000
- Northeast Warsaw mass transit services, inclusive of rolling stock, investor: Warsaw Tramway Ltd.; PLN 279,250,000
- Modernization of the WZ East–West tramway route, inclusive of the purchase of thirty low-floor trams, investor: Warsaw Tramway Ltd.; PLN 216,800,000
- Purchase of forty low-floor trams, investor: Warsaw Tramway Ltd.; PLN 129,650,000
- Commissioning of rail services to Okęcie airport and the purchase of thirteen modern trains, investor, Urban Rapid Rail, PLN 151,520,000
- Modernization of Railroad Line No. 8, Phase I: Warsaw Zachodnia [Western] – Warsaw Okęcie and the building of Warsaw Służewiec – Okęcie Airport branch line, investor: Polish Railway Lines, PLN 54,740,000

Pursuant to the multi-year investment plan, a total of 360 projects involving roads and mass transit shall be executed in the upcoming years. The city budget has reserved almost PLN 8 billion for this purpose!

Worth adding is that over the year 2007–2013, thirteen road projects within the limits of the Capital City of Warsaw shall receive co-financing out of European Union resources. The value of this co-financing will also amount to almost PLN 8 billion.

