

Annual report

2020



PUBLIC ROADS AUTHORITY

Annual report

2020



PUBLIC ROADS AUTHORITY

Preface

Dear All,

we went through a year full of challenges and difficult decisions, often dictated by the coronavirus pandemic. Despite obstacles, we consistently strive to achieve our assumptions. My ambition and vision I believe in is a Warsaw that is safe, friendly, convenient and accessible. I want it to be an ideal place not only for work but also for living.

The work that we successfully completed and the work we plan fit into that vision. As part of the 'New Centre of Warsaw' project, we modified Jana Pawła II Av. and Czterdziestolatka roundabout. As announced, we have ground pedestrian crossings, new bike paths and greenery.

The modification of Jana Pawła II Av. was the first step to the new centre of Warsaw – in 2021 we will face further changes, such as marking out ground pedestrian crossings around Dmowskiego roundabout, modification of the so-

called Five Corners Square [pl. Pięciu Rogów], construction of a bike road along Marszałkowska St. or an architectural competition that will change Chmielna St.

Other streets also underwent a metamorphosis, e.g. Górczewska St. This is an example that the interests of all road users can be balanced, i.e. of drivers, pedestrians and cyclists. We have more greenery, new sidewalks, there is a new bike path, parking spaces were ordered, and their number increased.

This is not the end of changes – in 2021 we also want to start the construction of a new symbol of Warsaw, i.e. the first pedestrian and bike bridge across the Vistula River. This investment will be the most architecturally interesting crossing in the capital city. Other cities in the world are famous for similar constructions, e.g. London or Madrid.

Like every year, safety is also our priority. In 2020, we completed an audit of unsignalized pedestrian crossings. The entire process took five years, and its scale was probably the largest in the world – we checked a total of 4,093 pedestrian crossings. Now, we implement changes at the lowest rated zebra crossings.

Convenience and accessibility are equally important – in 2020 we marked out new pedestrian crossings, renovated roadways and pavements, removed architectural barriers and built new traffic lights. All this to facilitate moving around for the elderly, persons with disabilities or caregivers with toddlers in prams. I can assure you that those changes will be continued.

We have also decided to continue our activities in the field of innovative technologies. Now, there are two e-control cars operating in Warsaw, which made nonpayment in the paid parking zone unprofitable. We will continue to fight parking pirates and plan to purchase more special vehicles.

The pandemic affected all of us, but I am deeply convinced that thanks to consistency, persistence and solidarity, we will continue to build Warsaw – a safe, friendly, accessible and convenient capital city.



Rafał Trzaskowski
Mayor of Warsaw

Dear All,

in 2020, we faced the greatest hardships in the history of ZDM [Public Roads Authority]. The coronavirus pandemic disrupted the functioning of virtually all industries, not sparing us, road workers. At some point, the quarantine of our unit employees and contractors became common, which had an impact on the pace of work. Nevertheless, despite the obstacles and while complying with sanitary guidelines, step by step, we reached the finish line with 'done' written across it.

We managed to complete a number of important investments. Number one was the modification of the central section of Jana Pawła II Av. and Czterdziestolatka roundabout, which initiated changes in Śródmieście for the sake of New Centre of Warsaw. We completely changed the face of Górczewska St., making it elegant. Yet, this is only a fraction of what we did – many other streets underwent metamorphosis.

Some went through cosmetic changes only but expected by citizens. The perfect example is Francuska St. – in accordance with the expectations of the inhabitants, we embellished it with greenery. We opted for such a solution in other places, adhering to the principle that a good road is one that not only allows all road users to reach their destination but also makes it more pleasant to live by it and spend time there.

Naturally, safety remains our top priority. We have been successively implementing changes at subsequent unsignalized pedestrian crossings, the audit of which was completed in 2020. Each time, they went hand in hand with improved accessibility and convenience for all road users.

However, 2020 was also unique in another respect – we focused on technological innovations by introducing an e-control system in the paid parking zone. We expanded the zone itself to improve the protection of the parking needs of the local community.

Many of the changes, such as the one concerning the zone, were introduced in consultation with citizens. We consult with them the most important investments, take into account their observations and comments and then confront it with our knowledge and experience in order to develop the best solutions. Therefore, I would like to thank everyone for their commitment to the city.

I would also like to extend my thanks to the ZDM employees and contractors as well as to the councillors and city authorities. Without their support, it would have been impossible to implement all plans. I hope that with their help we will face new tasks in the coming years.

For that to happen, especially in the times of a pandemic, we need perseverance. So, presenting the ZDM annual report for 2020, I wish this to us and to you.



Łukasz Puchalski
Director of the Public Roads Authority (ZDM)

Table of contents

6

Introduction

82020 in numbers

11

Renovations and modifications

12Jana Pawła II Av. and Czterdziestolatka roundabout

14Górczewska St.

16Przyczółek Grochowski

18Zjednoczenia Av.

20Saska St.

22New roundabouts

24Road surface repairs

26Pavement repairs

28Providing streets with more greenery

30We improve accessibility

32New bike paths

34Renovations of parking lots

35Drainage and hydrotechnical devices

37

Safety

38Pedestrian crossings safety audit

40Traffic speed measurements

42Changes in traffic organization

44Street lighting

46Additional lighting at pedestrian crossings

48Traffic lights

50Integrated Traffic Management System

53

Routine maintenance

54Emergency Breakdown Services

56Bridge structures

58Underground parking lots

60Right of way

62We remove illegal advertising

64Municipal Information System

67

Development and projects

68Extension of the Metered Parking Zone

70E-control

72Veturilo

74Winter illumination

77

Plans for the future

78Improving safety

80Five Corners Square

82New Centre of Warsaw

84Lighting modernization

86Pedestrian and bike bridge to Praga

89

We are available for you

90Public consultations

92Civic budget

94Efficient handling of notifications from citizens

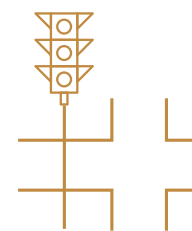
96ZDM behind the scenes

Did you know that...

The Public Roads Authority manages over 800 km of roads in Warsaw.

PLEASE NOTE: those are not all roads in the city. A large part of them are communal streets, which are the responsibility of district offices. In turn, express roads are managed by the General Directorate for National Roads and Motorways.

ZDM in numbers



849

intersections and pedestrian crossings with traffic lights



37,300

parking spaces in the Metered Parking Zone



93,700

signposts, boards and maps of the Municipal Information System



116,739

streetlights



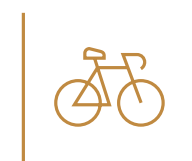
120,401

luminaires



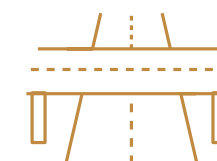
1.1 m

energy-saving eco-LED diodes in winter illumination



675 km

of bike routes



545

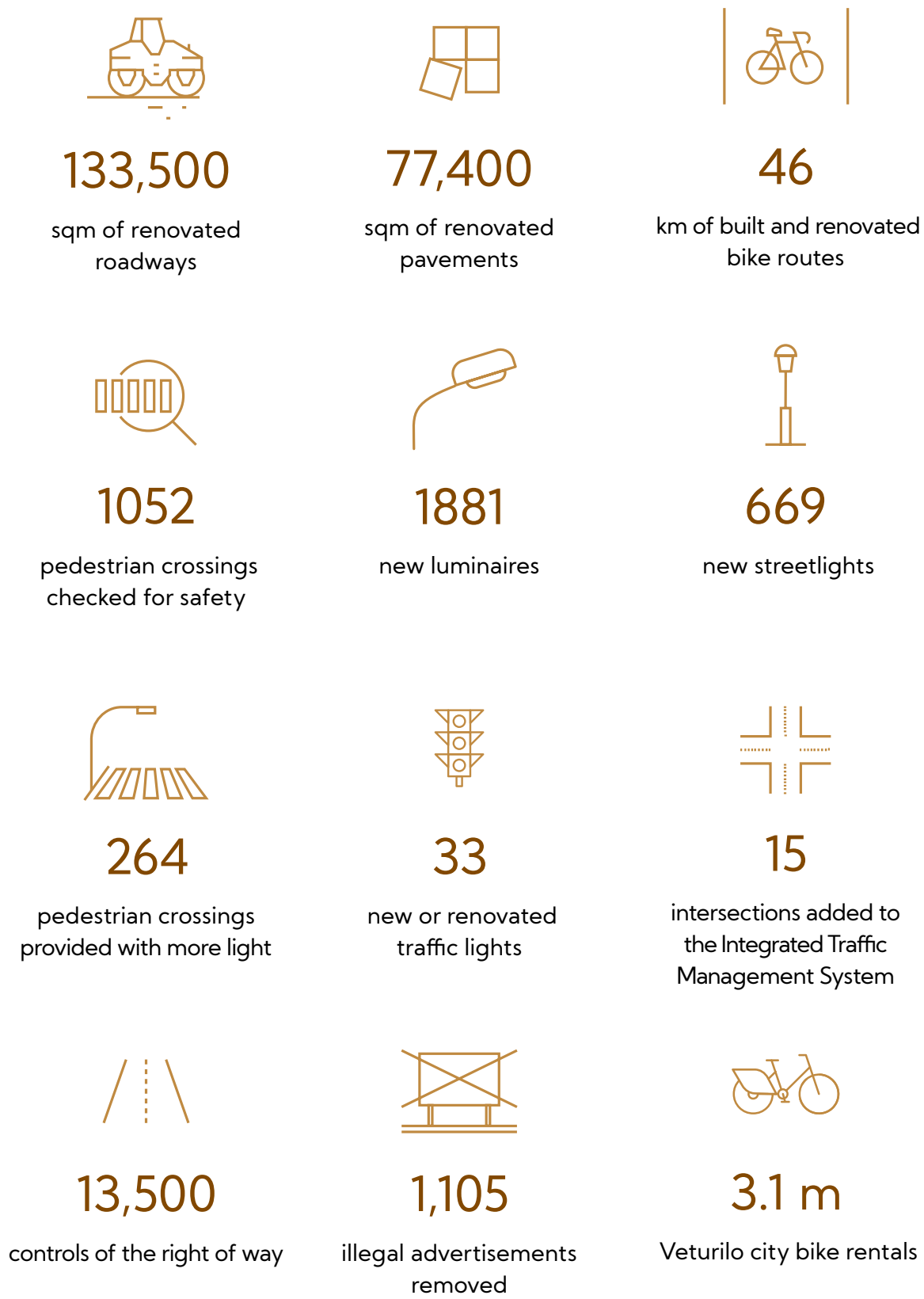
bridge and engineering facilities



520

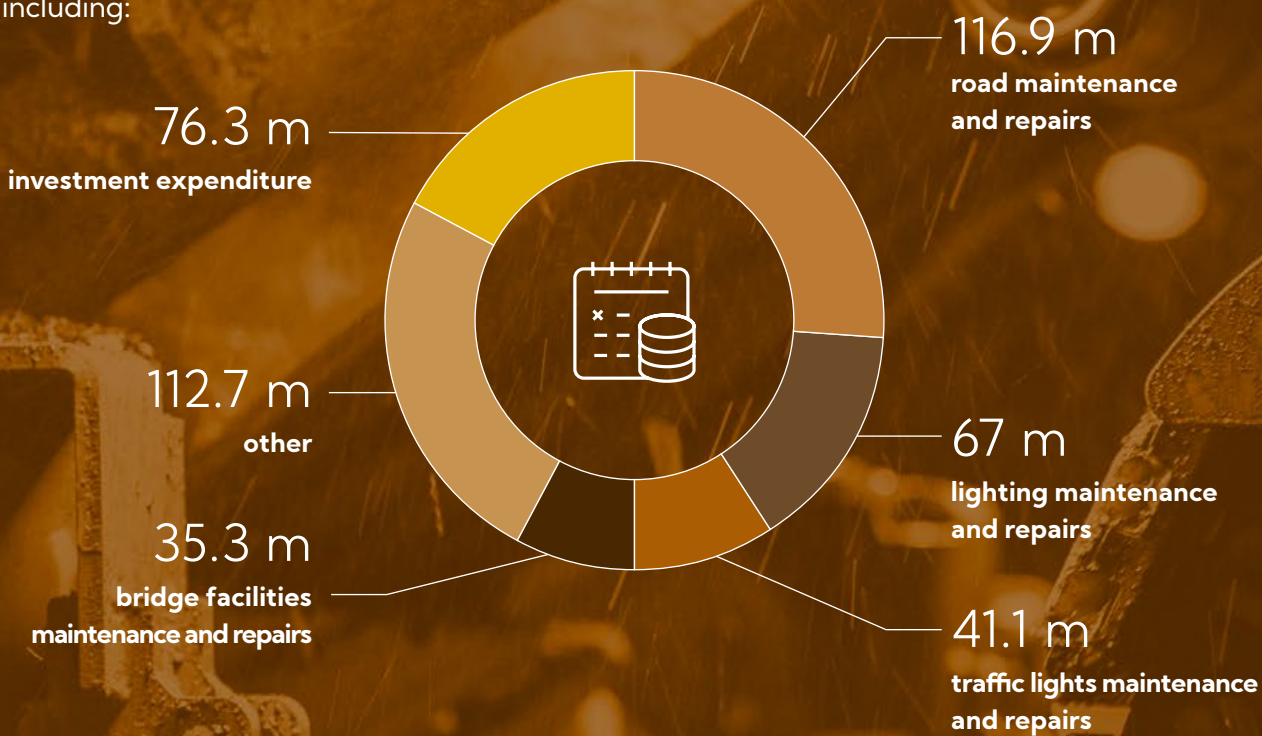
employees

2020 in numbers



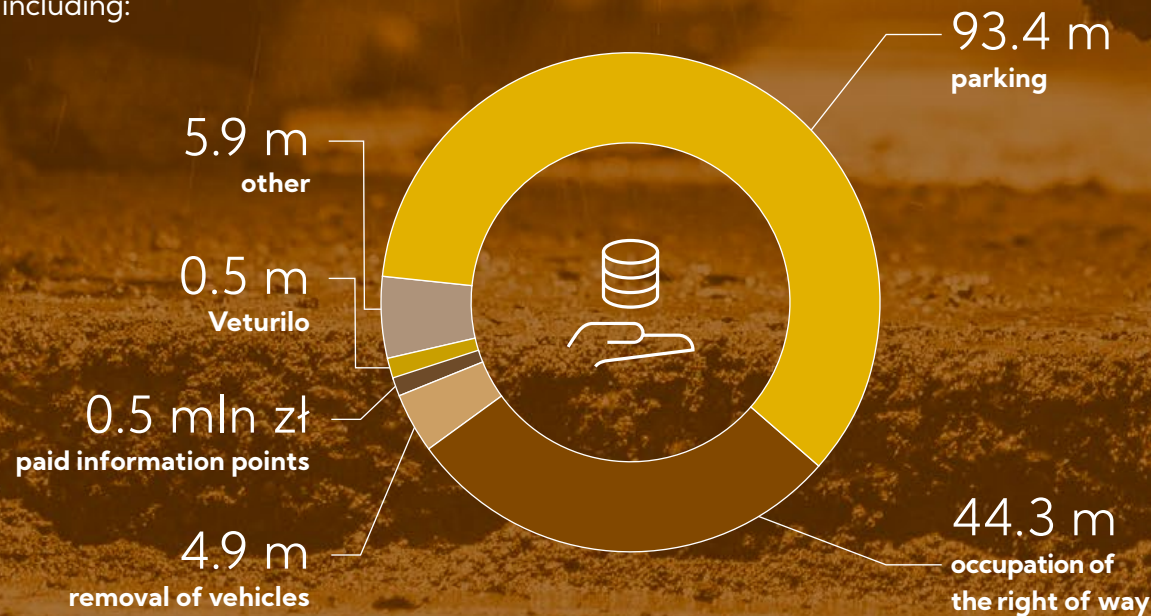
Total expenses in 2020 PLN 449.3 million

including:



Total proceeds in 2020 PLN 149.8 million

including:





Renovations and modifications

The main task of Public Roads Authority is maintenance of road infrastructure. Modifications, modernization and minor repairs improve the comfort and safety of road users as well as make the public space more aesthetic. In 2020, we carried out a number of investments that helped drivers, pedestrians and cyclists to better move around the city.

- 12 Jana Pawła Av. II and Czterdziestolatka roundabout
- 14 Górczewska St.
- 16 Przyczółek Grochowski
- 18 Zjednoczenia Av.
- 20 Saska St.
- 22 New roundabouts
- 24 Road surface repairs
- 26 Pavement repairs
- 28 Providing streets with more greenery
- 30 We improve accessibility
- 32 New bike routes
- 34 Renovations of parking lots
- 35 Drainage and hydrotechnical devices

Jana Pawła II Av. and Czterdziestolatka roundabout

Modification of the main section of Jana Pawła II Av. and Czterdziestolatka roundabout was the first step towards the New Centre of Warsaw. The roadways and pavements were renovated, new bike paths built and rows of trees planted, while pedestrians were provided with ground pedestrian crossings at the roundabout.

The project was driven by the idea to evenly divide the street space between all its users. Due to the standardization of the basic cross-section of the road, drivers have three lanes in each direction at their disposal, including the viaduct over the roundabout. That, in turn, resulted in space for wide pavements lined with aesthetic terrazzo.

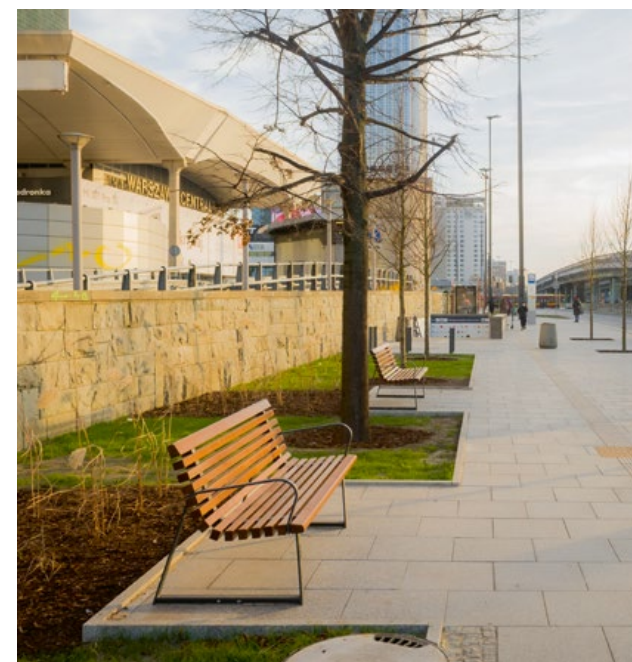
There was also enough space for bike paths. 3-metre wide routes were created on both sides of the avenue.

We removed the barriers at Czterdziestolatka roundabout. Two ground pedestrian crossings were built in its vicinity – across Jana Pawła II Av. and Jerozolimskie Av. The former, created on the northern side, allows pedestrians to reach the tram stops in seconds, while the latter is accompanied by a bike crossing. As a result, the new bike path is now connected to Nowogrodzka St., adapted to cycling, where we created a third zebra crossing along with a bike crossing.

Greenery completed the change. During the modification, we planted 35 common limes, 2 oaks, thousands of bushes and wide strips of sedum. On both sides of the alley, there are also elements of street furniture in the form of benches.



Three new pedestrian crossings



Górczewska St.

One of the most important streets in Wola has become safe and convenient. New pavements, bike paths, parking spaces and greenery appeared on the section between Syreny St. and Młynarska St.

It is the second metro line that has contributed to the changes. The construction of three stations in Wola has translated into a new communication reality for this area. On both sides of Górczewska St., we laid new pavements made of concrete anti-smog slabs, equipped with facilities for the blind and the visually impaired. Now, people with disabilities can use ramps at parking spaces and inclines at public transport stops. The comfort and safety of cyclists has been ensured by an asphalt bike road built on the northern side.

A part of the street was made free due to the removal of the bus lane, which was replaced with parking bays. Thanks to them, more parking spaces are available. Thus, the geometry of Górczewska St. was adapted to the cross-section of Leszno St., which is its natural extension towards the city centre.

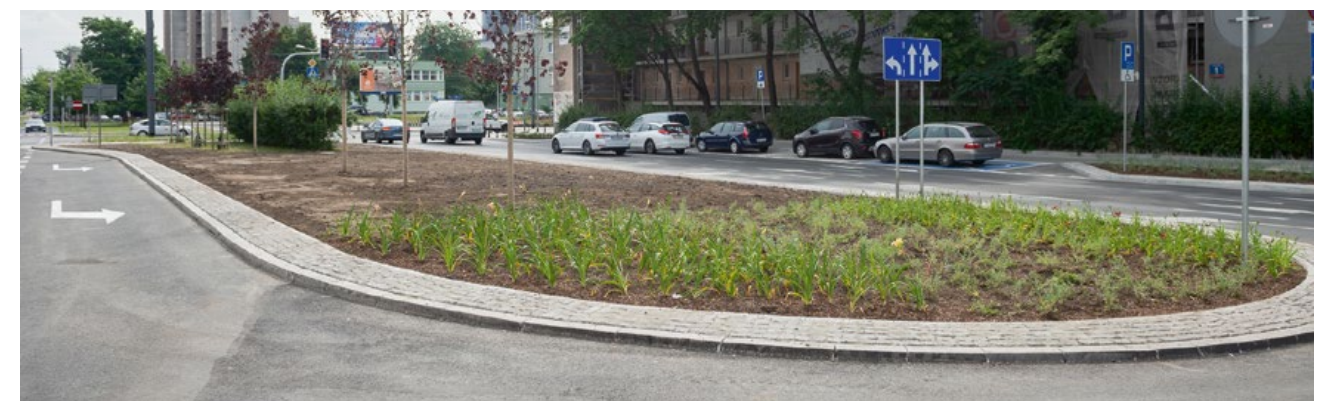
The street was provided with new lighting. We replaced the old posts with new ones, equipped with

LED lamps. At Tyszkiewicza St., we marked out an additional pedestrian crossing and bike crossing with traffic lights; we also rebuilt the traffic lights at Płocka St. – we equipped them with automatic detection and synchronized with the remaining intersections.

There is also more greenery. Almost 100 new trees appeared, of which nearly 30 greened the strip separating Górczewska St.



Nearly 100
new trees



Przyczółek Grochowski

The viaduct along Ostrobramska St. over Stanów Zjednoczonych Av. underwent a major renovation. The entire bridge deck of the crossing was replaced; we also refurbished its surroundings – we renewed sidewalks, routes for pedestrians and cyclists and platforms.

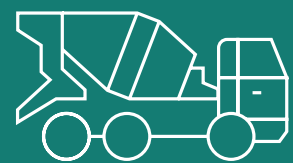
The junction at Przyczółek Grochowski was built in the 1970s as one of the facilities of Trasa Łazienkowska and, due to the lapse of time, it was significantly degraded. The technical condition of the crossing deteriorated so much that prior to the commencement of work, the bearing capacity of the structure had had to be reinforced by temporary supports.

In order to renovate the facility, it was necessary to completely dismantle it. We replaced the most important elements of the crossing with new ones. The key stage of the modernization was the replacement of the viaduct's bridge deck. Pouring 1,400 m³ of concrete and its laying took over 24 hours due to the dimensions of the deck: 81 m long, 19 m wide and 1 m thick roadbed.

We equipped the facility with the necessary elements, e.g. railings and barriers. The viaduct was also provided with new expansion joints and a rainwater drainage system. The pavement was built of the so-called resin screed.

Changes were also performed in the vicinity of the crossing. We renovated sidewalks, routes for pedestrians and cyclists and platforms, which we raised to the level of 16 cm above the road to facilitate boarding the buses. We also moved one stop to make transfers more convenient.

For that purpose, we also improved access to four separated stops operating 11 lines. We rebuilt the stairs on the northern side of the junction. In the next stage, it will be possible to build an incline leading to the viaduct, for which we have kept an appropriate reserve.



1,400 m³
of poured
concrete



Zjednoczenia Av.

At the beginning of May 2020, the modernization of Zjednoczenia Av. came to an end. One of the most important streets in Bielany underwent a complete metamorphosis and became more beautiful. The introduced changes improved the comfort and safety of all road users.

The modification began in September 2019. First, it covered the section from Żeromskiego St. to Kasprowicza St. Then the work was carried out eastwards towards Marymoncka St.

In total, the roadway gained over 9,500 m² of new surface along with the subbase layer along the entire fragment of the avenue, which is almost a kilometre long. We replaced the old and damaged pavements with new ones, laying 50 x 50 cm anti-smog concrete slabs with a total area of over 8,000 m². We improved parking possibilities by creating parking bays for over 130 cars by the road. We renovated the bike path on the northern side, which we extended to Żeromskiego St. As a result, we could connect that street with Marymoncka St. We installed 32 new bike stands and created a bike parking lot at the level of the Stare Bielany metro station.

We moved the stops located at the top of the intersections with Żeromskiego St. and Kasprowicza St. to the bottom. We renovated the existing bays – we provided them with raised curbs, making it easier to board the bus. We eliminated many more architectural barriers – we installed guiding and warning plates for the visually impaired and the blind on the pavements and next to the pedestrian crossings.

We also improved visibility. We installed new street-lights, which we equipped with LED luminaires. As a result, it is brighter on the roadway, pavements and at pedestrian crossings.



Parking bays
for over
130 cars



Saska St.

New road surface, replaced pavements as well as additional greenery with trees. This is the result of the modernization of Saska St., which turned into a beautiful city street.

Saska is one of the most important streets in Saska Kępa, but it also connects Gocław with the city centre. A few years ago, given the closure of the Łazienkowski Bridge, which had to be renovated due to a fire, it went through a period of increased traffic, which accelerated the degradation of road surface.

As a result of the work carried out, Saska St. on the section from Waszyngtona Av. to the intersection with Zwycięzców St. underwent a complete change. Now, it not only serves traffic but has become a great place for walks.

The drivers move on new road surface, which we replaced together with the subbase layer. We built new curbs on both sides of the street and renovated the gate exits. We also laid new pavements. We made them

in accordance with the applicable design standards, laying aesthetic concrete slabs. We supplemented them with guiding lanes and plates with bumps to help the blind and the visually impaired.

Initially, the modernization was supposed to end there, but at the request of local citizens, we extended its scope to include more greenery by the streets. At Saska St., we planted nearly 8,000 shrubs and perennials, e.g. ninebark, Thunberg's barberry, wild privet and day-lilies. They were also joined by trees – 18 American ash trees. The greenery replaced unnecessary concrete at the corners of the intersections or at the entrances to properties. Consequently, the aesthetics of the renovated street improved.



Nearly 8,000
new plants



New roundabouts in Ursus and Muranów

Changing an intersection into a roundabout is one of the ways to improve safety. To that end, we built roundabouts at the intersection of Spisaka St., Sosnkowskiego St. and Regulska St., as well as Anielewicz St. and Karmelicka St. In the latter, it is also cyclists that move in a circle.

The roundabout in Ursus replaced an oversized intersection whose intersection zone covered an area of over 600 m². Such an arrangement had no practical justification – it was inadequate to the nature of the streets that formed it, i.e. Spisaka St., Sosnkowskiego and Regulska St., and therefore unclear to drivers.

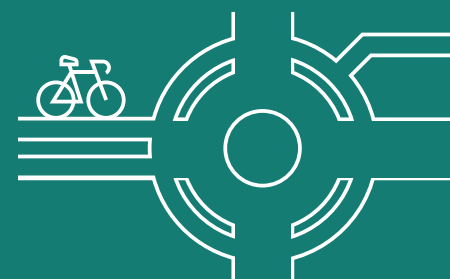
The new solution ordered the traffic, streamlined the traffic flow and improved the safety of pedestrians. We marked out two pedestrian crossings – across Spisaka St. and Sosnkowskiego St. On those one-way streets, we also allowed bicycle traffic in both directions as part of an idea reported under the civic budget. We designed the geometry of the circular intersection so that city buses can fully drive through it in order to reach the stops on the nearby terminal.

A roundabout was also an element of the changes performed at Anielewicz St. in Muranów. It was erected at the intersection with Karmelicka St. It replaced an intersection with an extensive intersection zone and wide curves, which encouraged fast driving. Now, drivers move slower and more carefully, which has improved the safety of pedestrians and cyclists. The latter have 'their' circular intersection, which was built around the circumference of the car roundabout.

We connected the one-way bike path built in a circle with the roadway thanks to the bike lanes we marked out on the roadway of Anielewicz St. We created those lanes on the section from Karmelicka St. to Okopowa St. We separated them while maintaining the existing arrangement and a similar number of parking

spaces. The roadway has still one lane with additional lanes for turning marked out in the area of the intersections.

In 2020, we also designed projects for subsequent roundabouts: at Kasińskiego St. (the intersection with Przasnyska St.), at Powązkowska St. (the intersection with Obrońców Tobruku St.), at Augustówka St. (the intersection with Zawodzie St.) and at Smocza St. (the intersection with Stawki St.). Those locations were selected on the basis of the results of road safety audits and citizens' applications. We also plan to build two roundabouts at Kadetów St. in Wawer.



Bike
roundabout

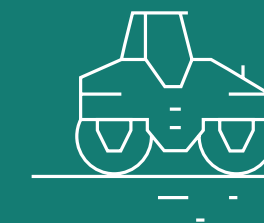
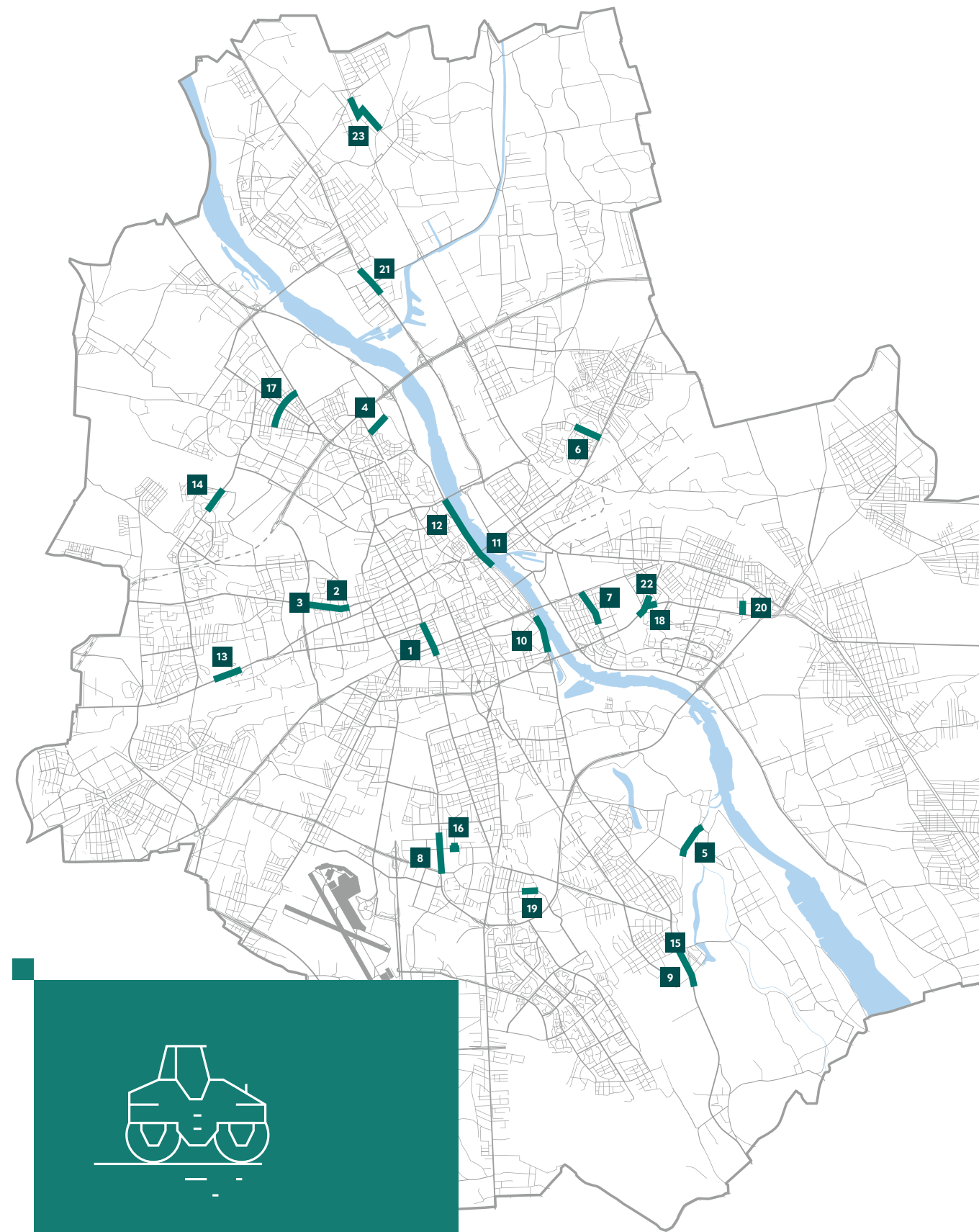


Road surface repairs

One of our main tasks is to maintain the road infrastructure in good condition. Each year, we renovate thousands of metres of road surface.

Maintaining the road infrastructure in proper condition requires more than just major modernization and modifications. Smaller renovations are no less important. In 2020, like in previous years, we carried out quick weekend renovations of road surface. Thus, we fixed subsequent streets. Those included, among others, **roundabout Szczepańskiego 'Ziutka', Rodziewiczówny St., Wybrzeże Gdyńskie St., Połczyńska St., Trocka St., Wałbrzyska St., Kobyłańska St.** or viaducts at **Modlińska St.** over the intersection with Płochocińska St. We also removed ruts and losses at the intersection of **Przyczółkowa, Branickiego and Vogla St.**

1. **Jana Pawła II Av. and Chałubińskiego St.** on the section from ONZ roundabout to Nowogrodzka St. – 18,157 m²
2. **Górczewska St.** on the section from Prymasa Tysiąclecia Av. to Młynarska St. – 14,476 m²
3. **Szczepańskiego "Ziutka" roundabout** – 3,640 m²
4. **Potocka St.** on the section from Mickiewicza St. to Turowicza roundabout – 4,949 m²
5. **Kobyłańska St.** on the section from Zawodzie St. to the service exit to EC Siekierki – 2,708 m²
6. **Trocka St.** on the section from Radzymińska St. to the Trocka metro station – 3,904 m²
7. **Saska St.** on the section from Waszyngtona Av. to Zwycięzców St. – 7,164 m²
8. **Wołoska St.** (western roadway) on the section from Bagażowa St. to Unii Europejskiej roundabout – 9,701 m²
9. **Przyczółkowa St.** on the section from Branickiego St. to the S2 route – 10,363 m²
10. **Wioślarska St. and Solec St.** on the section from Ludna St. to Górnośląska St. – 5,996 m²
11. **Wybrzeże Kościuszkowskie St.** (eastern roadway) on the section from Karowa St. to Grodzka St. – 2,162 m²
12. **Wybrzeże Gdańskie St.** on the section from Grodzka St. to Wenedów St. – 4,354 m²
13. **Połczyńska and Wolska St.** on the section from the PKP viaduct to the pedestrian crossing at the tram terminal – 7,375 m²
14. **Powstańców Śląskich St.** (western roadway) on the section from Piastów Śląskich St. to Morcinka St. – 4,456 m²
15. **the intersection of Przyczółkowa St., Vogla St. and Branickiego St.** – 2,117 m²
16. **the intersection of Domaniewska St. and Samochodowa St.** – 3,365 m²
17. **Zjednoczenia Av.** on the section from Żeromskiego St. to Marymoncka St. – 7,261 m²
18. **Stanów Zjednoczonych Av.** at the level of the Przyczółek Grochowski junction – 1,973 m²
19. **Wałbrzyska St.** on the section from Dominikańska St. to Wróbla St. – 2,697 m²
20. **Rodziewiczówny St.** on the section from Ostrobramska St. to Jubilerska St. – 3,260 m²
21. **Modlińska St.** on the viaducts over the intersection with Płochocińska St. – 5,135 m²
22. **Ostrobramska St.** on the viaduct at the Przyczółek Grochowski junction – 1,980 m²
23. **the sequence of Ołówkowa, Parowozowa and Polnych Kwiatów St.** on the section from Wałuszewska St. to Starego Dębu St. – 6,329 m²

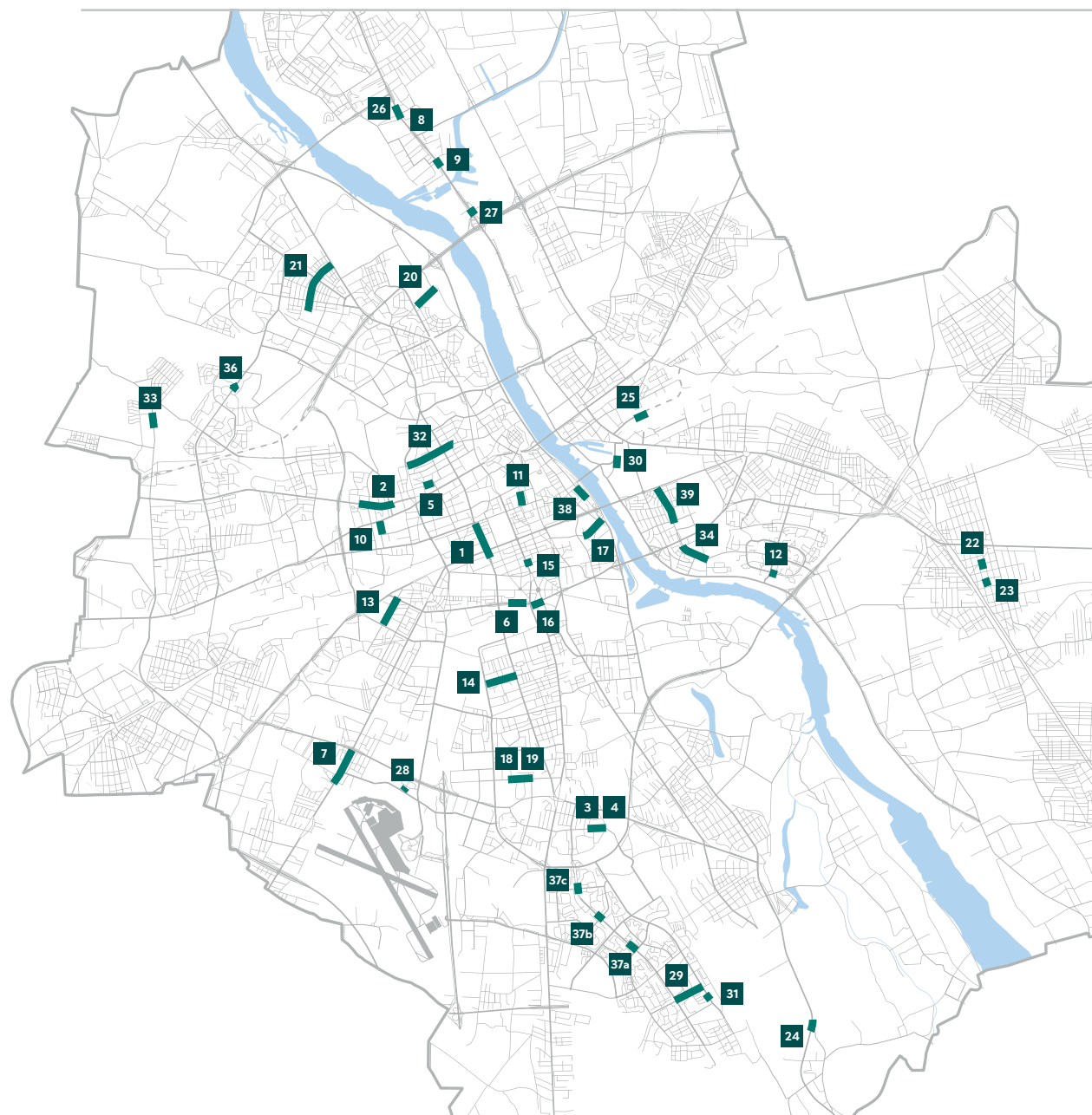


In total:
133,522 sqm
of new asphalt

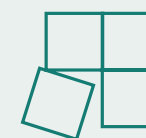
Pavement repairs

The road infrastructure also includes pavements, the condition of which we gradually improve. It was no different in 2020 – we laid more kilometres of new, aesthetic pavement slabs.

The comfort and safety of pedestrians are very important to us. Last year, we renovated subsequent sections of pavements – we replaced old slabs, plenty of losses, with new, in many places anti-smog ones. As a result, pedestrians gained comfort on their way, for example, to stops. Even, safe and comfortable pavements appeared, among others, at **Mazowiecka, Ludna, Madalińskiego** or **Skierniewicka St.**



1. **Jana Pawła II Av. and Chałubińskiego St.** on the section from ONZ roundabout to Nowogrodzka St. – 10,597 m²
2. **Górczewska St.** on the section from Syreny St. to Młynarska St. – 7,876 m²
3. **Wałbrzyska St.** (northern side) on the section from Dominikańska St. to Wróbla St. – 2,084 m²
4. **Wałbrzyska St.** (southern side) along the cemetery – 1,181 m²
5. **Żytnia St.** (northern side) on the section from Wolność St. to skwer kard. Wyszyńskiego – 618 m²
6. **Armii Ludowej Av.** (northern side) at the level of the campus of the Warsaw University of Technology – 550 m²
7. **Krakowska Av.** (western side) on the section from Lipowczana St. to Geologiczna St. – 3,016 m²
8. **Modlińska St.** (western side), 200 m north of Płużnicka St. – 469 m²
9. **Modlińska St.** in the area of the intersection with Kowalczyka St. and Żerańska St. – 2,705 m²
10. **Skierniewicka St.** on the section from Wolska St. to Siedmiogrodzka St. – 4,743 m²
11. **Mazowiecka St.** on the section from Małachowskiego square to Świętokrzyska St. – 1,577 m²
12. **Jugosławińska St.** (southern side) on the section from Fieldorfa 'Nila' St. to Kwiatkowskiego St. – 1,092 m²
13. **Szczęśliwicka St.** (eastern side) on the section from Bitwy Warszawskiej 1920 St. to Sokołowskiego 'Grzymały' St. – 2,970 m²
14. **Madalińskiego St.** (northern side) on the section from Boboli St. to Niepodległości Av. – 3,232 m²
15. **along the tram tracks along Marszałkowska St.** as an access to the tram stop – 153 m²
16. **al. Armii Ludowej** (southern side) on the section from Waryńskiego St. to Marszałkowska St. – 1,340 m²
17. **Ludna St.** on the section from Wioślarska St. to the intersection with Orłowicza St. – 4,524 m²
18. **Domaniewska St.** (northern side) on the section from Samochodowa St. to Pęcherska St. along with the intersection with Samochodowa St. – 1,016 m²
19. **Domaniewska St.** (southern side) on the section from Samochodowa St. to Modzelewskiego St. – 872 m²
20. **Potocka St.** on the section from Mickiewicza St. to Turowicza roundabout – 1,992 m²
21. **Zjednoczenia Av.** on the section from Kasprowicza St. to Marymoncka St. – 7,674 m²
22. **the intersection of Kajki St. and Odrodzenia St.** – 908 m²
23. **the intersection of Kajki St. and Alpejska St.** – 934 m²
24. **the intersection of Przyczółkowa St. and Drewny St.** – 102 m²
25. **Kijowska** at the level of the Eastern Railway Station – 1,377 m²
26. **the intersection of Modlińska St. and Ekspresowa St.** – 1,019 m²
27. **the intersection of Modlińska St. i Elektronowa St.** – 330 m²
28. **the intersection of Komitet Obrony Robotników St. and Zarankiewicza St.** – 286 m²
29. **Belgradzka St.** on the section from Komisji Edukacji Narodowej Av. to Rosoła St. – 2,540 m²
30. **Sokoła St.** on the section from Siwca St. to Zamoście St. – 630 m²
31. **next to the parking lot at Rosoła St.** – 289 m²
32. **Anielewicz St.** on the section from Okopowa St. to Brandta square – 1,467 m²
33. **Urbanowicza St.** on the section from Archimedes St. to the Main Library of the Military University of Technology – 656 m²
34. **Saska St. and Egipska St.** on the section from Lizbońska St. to Afrykańska St. – 1,392 m²
35. **the intersection of Spisaka St., Sosnkowskiego St. and Regulska St.** – 372 m²
36. **between Kawy St. and the pedestrian crossing across Powstańców Śląskich St.** to the Nowe Bemowo terminus – 134 m²
37. **Komisji Edukacji Narodowej Av.** at the entrances to the Ursynów, Stokłosy and Imielin metro stations – 1,225 m²
38. **Wybrzeże Kościuszkowskie St.** (western side) on the section from Tamka St. to Jaracza St. – 1,131 m²
39. **Saska St.** on the section from Waszyngtona Av. to Zwycięzców St. – 2,400 m²



**In total: 77,473 m²
of new or renovated
pavements**

Providing streets with more greenery

Roads are not limited to asphalt and concrete. Street greenery is no less important: it makes them look more aesthetic, stimulates them and makes it more pleasant to live along them. Last year was marked by planting those places where paving blocks and slabs were superfluous.

A complete city street is one that looks beautiful while guaranteeing functionality to all road users. That beautiful look is provided by greenery. Plants embellish and diversify the public space as well as increase water retention. Additionally, trees, especially the older ones, provide shade in summer.

Therefore, acting in accordance with the Warsaw 'Strategy for Adaptation to Climate Change' adopted in 2019, we strive to increase the biologically active area on our streets. Last year, nearly all our actions concerning modernization or modifications, and sometimes also smaller-scale renovations, involved new plantings. The flagship example is Francuska St., the improvement of which consisted only in providing it with more greenery. We demolished over a thousand m² of surface there, and the place of superfluous concrete was taken by nearly 9,000 cotoneaster, rose and lilac bushes. In addition, we created three rain gardens with plants that like moisture.

The other streets with more greenery include Ludna St., Wybrzeże Kościuszkowskie or Saska. We also grew plants at the corners of intersections where there was far too much asphalt or too many paving slabs; an excellent example is the north-west corner of the intersection of Modlińska St. and Płużnicka St. or the intersection of Nowy Jazd St. and Wybrzeże Kościuszkowskie St.

In addition to shrubs and perennials, we also planted trees in many locations. A genuine record was set at Górczewska St., where we planted over 100 trees on the modified section between Syreny St. and Młynarska St. On the other hand, on the modernized central section of Jana Pawła II Av., there are 35 new common limes and two oaks, and on the southern side of Armii Ludowej Av. on the section from Polna St. to Marszałkowska St. – 18 trees such as maples, hawthorns and cherries.



'Green' investments:



Francuska St.

782 m² of paving slabs removed for new greenery, 2,219 m² of new flowerbeds, 143 m² of three rain gardens



Saska St.

1,418 m² of flowerbeds, 18 new trees



Jana Pawła II Av.

37 trees planted, over 5,000 new plants, 1,300 m² of new lawns



Górczewska St.

115 trees planted: 21 by ZDM and 94 by the Warsaw Metro



Armii Ludowej Av.

275 m² of new greenery, 18 planted trees



Wybrzeże Kościuszkowskie St.

498 m² of new shrubs and perennials



Ludna St.

507 m² of new flowerbeds, 10 trees planted



Nowy Jazd St.

143 m² of new flowerbeds, 5 trees planted



the corner of Modlińska St. and Płużnicka St.

134 m² of new flowerbeds, 3 trees planted



the corner of Kijowska St. and Brzeska St.

65 m² of new bushes



Międzynarodowa St.

180 m² of paving slabs removed for greenery



Sokola St.

650 m² of paving slabs removed for greenery, 7 trees planted



Żytnia St.

46 m² of a new hedge



Jerozolimskie Av. along Spiska St.

54 trees planted at the new parking lot

We improve accessibility

Urban space should be convenient and accessible to everyone. Therefore, in 2020, we removed architectural barriers in nearly 100 locations. We improved the availability of Warsaw's infrastructure not only by implementing small investments but also during comprehensive renovations.

Generally, renewing pavements, lowering curbs or installing warning plates or guiding lanes are not major investments. However, they are important, especially for the local community. It is they that eliminate architectural barriers and improve the comfort and safety of the elderly as well as of parents with prams, cyclists and pedestrians.

In 2020, we allocated PLN 1.9 million for the related work. Thanks to that amount, we improved many pedestrian crossings and access to various sites in the city.

Last year, we put more emphasis on citizens' applications. We started work in the places they indicated in Białołęka, where we removed architectural barriers in 21 locations, and then continued them in Bielany (20 locations), Włochy (41) and Ursynów (13). In each of those districts, we lowered curbs, replaced fragments of damaged pavements, installed new warning plates for the blind or the visually impaired or eliminated unnecessary steps.

Some larger investments also took place. In Ursynów, we renovated the stairs at the exit of the Stokłosy metro station towards Bacewiczówny St. In Bielany, we built a short incline allowing pedestrians to bypass the high step in front of the entrance to the building of the Post-graduate Medical Education Centre. In turn, in Włochy, during the installation of traffic lights at the intersection of Krakowska Av. and Lipowczana St., we made a number of improvements in terms of accessibility.

We also removed architectural barriers during comprehensive road renovations or modifications. The flagship example is the modernization of Jana Pawła II Av. with Czterdziestolatka roundabout. At the roundabout, we marked out two ground pedestrian crossings – on the northern side across Jana Pawła II Av. and on the western side across Jerozolimskie Av. The lifts in the towers of the Poniatowski Bridge will be an important facilitation for pedestrians, as they will make it easier to enter this crossing from Wybrzeże Kościuszkowskie St. The investment, which is carried out on the basis of our concept by the Board of Urban Road Investments, should be completed in August 2021.



Renovated stairs
at one of the exits
of the Stokłosy
metro station



New bike routes

2020 was marked by the pandemic. Despite the related difficulties, nearly 50 km of bike routes were completed. Among the completed investments, there are groundbreaking projects for Warsaw.

The bike network in the capital city includes already approx. 675 km. The list of places where new sections of bike routes were built or repaired in 2020 contains several dozen items. Those were both short connectors between the existing routes as well as long and important sections of bike paths, usually implemented as part of large investments encompassing a comprehensive modification of the entire street. The implementation of those projects allowed us to maintain the pace of previous years – since 2012, we have built or renovated over 400 km of routes.

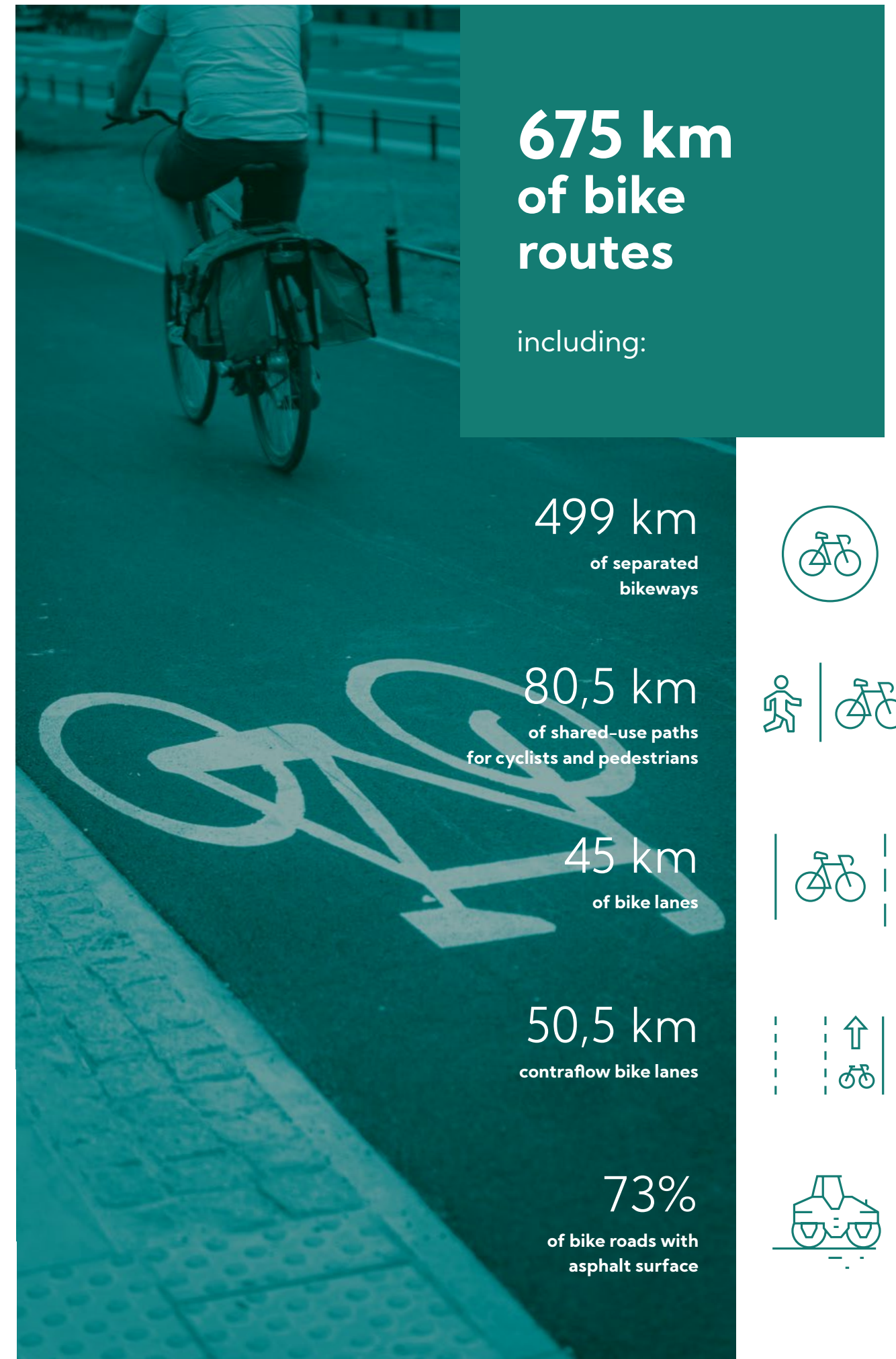
The bicycle highlight of 2020 in Warsaw was the modification of Jana Pawła II Av. and Chałubińskiego St. between ONZ roundabout and Nowogrodzka St. As a result, one kilometre of new paths of great traffic importance was created on both sides of the street. The arrangement of the routes in this part of the city has changed significantly – bike crossings at Czterdziestolatka roundabout and on the axis of Nowogrodzka St., under the flyover, unblocked new routes.

Other large investments also contributed to the expansion of the bike infrastructure in the capital city. New or new quality routes were created as part of the implementation of the investments supervised by the Board of Urban Road Investments, including modernization of the intersection of Grójecka St., Raławicka St. and Harfowa St. or the expansion of Trakt Lubelski St. and Wał Miedzeszyński St.

The coherence of the emerging bike path network is of utmost importance. Therefore, we focus on combining the existing fragments, closing the gaps between them. At the junction of Saską Kępa and Gocław, an important addition is the route along Egipska St. and Saską St. Bike lanes were created at Umińskiego St. and Meissnera St. As a result, together with the paths at Bora-Komorowskiego St. and Jugosłowiańska St., they form an almost complete backbone of the bike routes between Trasa Łazienkowska and Trasa Siekierkowska.

We also do not forget about renovations. We have been keeping their pace at approx. 10 km per year. In 2020, we laid asphalt in place of cobblestones or concrete at, among others, Belgradzka, Boboli, Powstańców Śląskich, Kasprowicza, Saska (on the section Waszyngtona St. – Zwycięzców St.), Wołoska St. and at Armii Ludowej Av., Komisji Edukacji Narodowej and Zjednoczenia. As a result, the constantly growing share of the capital city's network of asphalt bike paths has already increased to approx. 70%.

The majority of the renovations and a noticeable part of the bike paths under construction are projects implemented on the basis of citizens' selection under the civic budget. We also gradually implement projects submitted in previous years and work on timely implementation of the projects submitted in the latest editions. In 2020, we turned over 30 citizens' proposals into new bike infrastructure. The largest was associated with the erection of over 90 bike shelters at educational institutions in the capital city.



Renovations of parking lots

We do not forget about ordering parking in the city. Last year, we renovated two parking lots, which, together, can accommodate nearly 150 cars.

The construction of new parking lots is not our primary statutory activity. In the first place, parking spaces should be provided by the properties' owners. However, observing a great need in this regard, we try, wherever possible, to mark out parking spaces and arrange the parking so that drivers can comfortably leave the car and park legally and safely.

In 2020, we improved the infrastructure of two parking lots. In Ursynów, we completely changed the square at Rosoła St. at the level of the blocks at Lokajskiego St. We replaced the ground surface, full of holes, and fragments of old concrete with asphalt. Now, drivers have 45 parking spaces at their disposal. At the same time, we replaced the pavement next to it, thanks to which the aesthetics of the immediate surroundings of the square improved.

The second parking lot – in Ochota – was also basically made from scratch. It was built along the roadway of Jerozolimskie Av. between Spiska St. and Zawiszy Square and replaced the previous one, which did not dispose of public parking spaces. During the day, it was used mainly by employees of nearby office buildings, while at night it was mostly empty – citizens had no access to it. In addition, some drivers were deterred by the condition of the facility.

Now, the access road to the parking stands on the square is made of cobblestones, and the stands of openwork plates called ecogrid. The new public parking lot, which we have included in the Metered Parking Zone, has 103 spaces for cars and 4 restricted parking spaces for cars driven by people with disabilities. The investment was completed with the installation of LED lighting and the creation of lawns on which we planted 54 trees.



148 parking spaces in both parking lots



Drainage and hydrotechnical devices

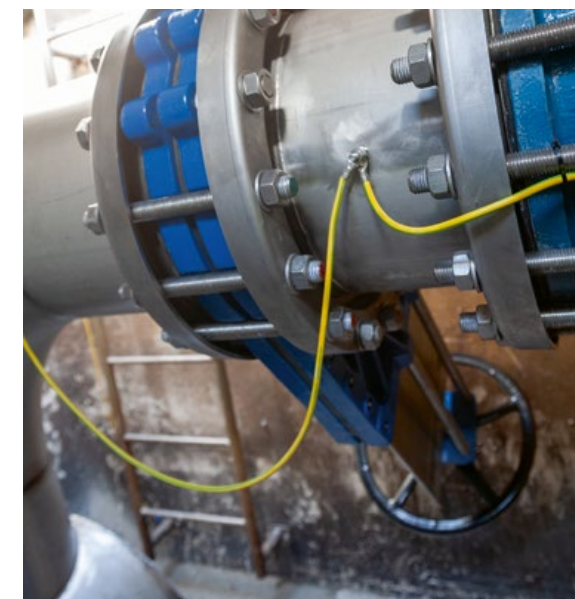
Drainage is one of the most important elements of road infrastructure. We take care of its condition on the roads we manage by maintaining and renovating hydrotechnical devices. Last year, we also modernized the rainwater pumping station at Wał Miedzeszyński St.

Drainage elements are exposed to constant contamination and damage that may cause their blockage. It is especially visible now, with extreme weather events (storms or downpours) becoming more frequent.

Their effects are mitigated by, among others, street greenery, which retains water. However, an efficient road drainage system is also important.

For this purpose, we clean, among others, silt, vegetation and leaves from inlets and outlets of culverts under roads or renovate damaged buried sewers, culverts and sections of canals. We also add the missing manhole covers and inlets and adjust their height. In 2020, we adjusted 319 sunken or protruding manhole covers.

Last year, we modernized the pumping station at Wał Miedzeszyński St. in the vicinity of Bronowska St., whose task is to drain rainwater. We changed the way it is drained – we replaced the gravitational canal with a pressure one. We also replaced the old feed pumps with three new transfer pumps, which improved the parameters of the entire facility, since the efficiency of the new devices is 440 litres per second, 90 more than before. The investment was completed with the installation of new power supply and control systems as well as with the installation of shut-off fittings and check valves and fittings.



319 adjusted sunken or protruding manhole covers



Safety

The most important year in the last decade in terms of activities increasing road safety is behind us. We completed a five-year audit that covered over four thousand unsignalized pedestrian crossings – thanks to the audit we implement the best solutions for a given location. In addition, we modernized lighting and introduced changes to traffic organization so that all its participants feel safe and comfortable.

38	Pedestrian crossings safety audit
40	Traffic speed measurements
42	Changes in traffic organization
44	Lighting
46	Additional lighting at pedestrian crossings
48	Traffic lights
50	Integrated Traffic Management System

Pedestrian crossings safety audit

In 2020, we completed a safety audit of all unsignalized pedestrian crossings on Public Roads Authority roads. The entire process took five years, and its scale was probably the largest in the world. We took a closer look at 4,093 zebra crossings in the entire city. We implement the indicated solutions to the identified problems in the ones that received the lowest score.

Varsovians and tourists use various means of transport: they travel by public transport, car, motorcycle or bicycle. However, each of them becomes a pedestrian when they leave the vehicle or get off the bike or motorcycle. It is our duty to ensure their safety, so we checked all unsignalized pedestrian crossings to diagnose any problems there and implement the best solutions.

At the beginning, we inventoried all unsignalized pedestrian crossings – it resulted in a total of over 4,200 of such pedestrian crossings. As we wanted to check them as thoroughly as possible, each of them

underwent an inspection that was carried out not by one but several auditors. We set up 3- or 4-person teams consisting of persons with different competencies and experience. Moreover, each group included engineers holding the most advanced academic degrees so that their work was not limited to the analysis of the collected data behind the desk but also involved measurements and calculations in the field.

The auditors examined the safety of pedestrian crossings for 30 criteria. They included issues related to the geometry of the road, traffic organization and street lighting. The audit used, e.g. rangefinders, surveyor's wheels or special devices that test the light intensity at a pedestrian crossing and in its surroundings.

In 2016–2020, the audit teams checked pedestrian crossings in all districts of the city. In total, 4,093 pedestrian crossings were checked (the rest fell out, since they were provided with traffic lights or rebuilt in the meantime). The auditors gave the lowest score (0, 1 or in some cases 2 points on a scale from 0 to 5) and the recommendation of priority corrective actions to 481 zebra crossings.

Based on the recommendations, decisions are made about what changes to make. When deciding to introduce them, we approach each location individually. Nevertheless, the measures used can be grouped into a few most frequently employed actions, i.e. construction of traffic lights or installation of speed bumps.

4,093 unsignalized pedestrian crossings were audited

Carefully checked pedestrian crossings

Each pedestrian crossing has a different location and thus – different characterization. Therefore, a careful examination by auditors was of utmost importance. What were they exactly checking?

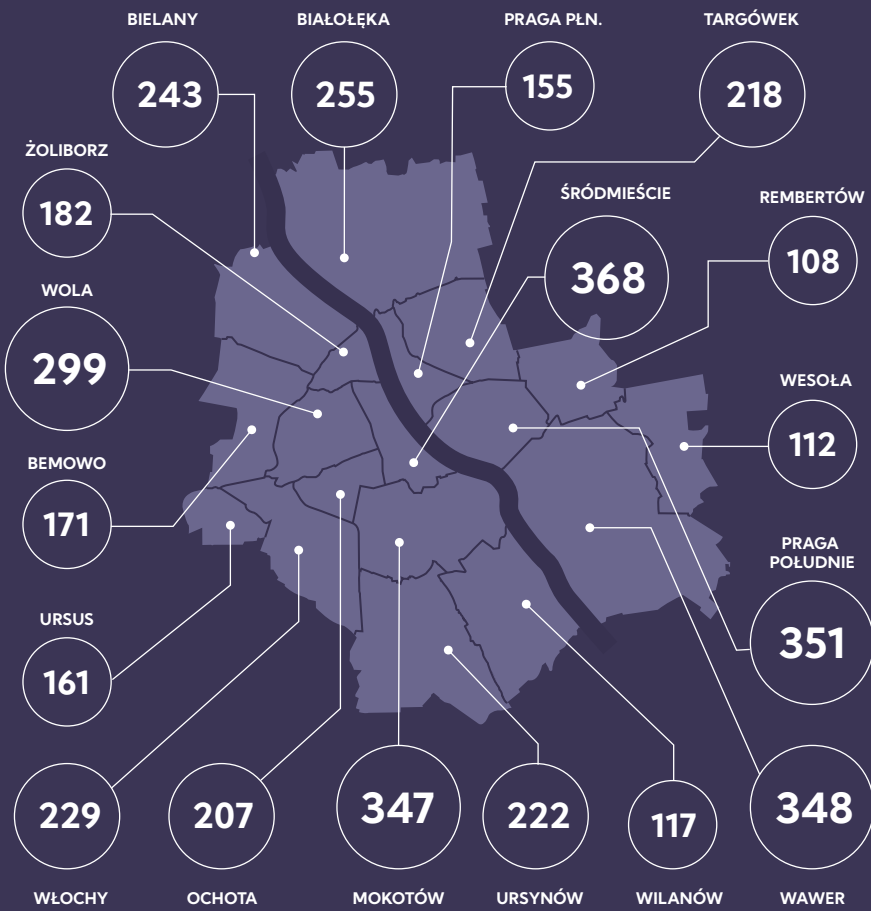
When going out into the field, the auditors took with them not only a number of necessary measuring devices but also a file of forms. In those documents, they presented the characterization of the pedestrian crossings as accurately as possible in order to diagnose the existing problems and suggest the best solution.

At the beginning, the auditors described the place examined in a very precise manner. They wrote the day and exact time they examined them and what the weather was like. Then they recorded the length and width of the pedestrian crossing, its location and the type of surface.

Afterwards, they focused on the location of the zebra crossing, taking into account, e.g. proximity to public transport stops and parking spaces. Referring to the latter, they determined whether cars were parked in the vicinity of the crossing, and if so, how and at what distance. As a result, they reported how the parked cars affected the visibility at the pedestrian crossing. Eventually, on the basis of all criteria, the auditors gave each zebra crossing a score from 0 to 5, supporting it with comments and recommending ways to improve safety.

The completed questionnaires provided us with a lot of valuable information about the examined crossings and allowed us to compare them. They served as the basis for the implementation of solutions improving the comfort of pedestrians in a given place. Since 2016, we have improved safety at over 200 zebra crossings, including at 102 'zeros' and 'ones.' This means that over 20% of the most dangerous pedestrian crossings have been rebuilt.

Number of pedestrian crossings audited in each district



Traffic speed measurements

Exceeding the speed limit results in dangerous situations on the roads and in accidents. In order to know the exact magnitude of the problem, we conduct speed tests. The results show that during the pandemic drivers drove even faster than in previous years.

In 2020, we conducted tests of instantaneous vehicle speed and traffic volume in the pandemic conditions. For the above reason, the tests did not start in spring but in autumn and lasted shorter – from 22 September to 19 November. The total duration of the tests comprised 65 measurement days. We measured the speed of 1.37 million vehicles on 207 analysed lanes.

We had assumed that due to the lockdown caused by the coronavirus, drivers would accelerate excessively on less busy streets. Unfortunately, our measurements confirmed that hypothesis. We registered over 857,000 events of exceeding the admissible speed limit, which means as many as 62% of all registered vehicles. Nearly 530,000 concerned events of exceeding speed by over 10 km/h (38% of all vehicles). Over 8,000 drivers exceeded the speed by more than 50 km/h, which means that they should lose their driving license (0.59%). That indicator was as much as a quarter higher than the year before.

The 'fastest' point turned out to be Puławska St. between the Wyścigi junction and the intersection with Pileckiego St. and Poleczki St. The average speed of vehicles in that place was 76.6 km/h.

The 'slowest' point was Barkocińska St. There, the average instantaneous speed for both directions was 30.4 km/h.

We provided the results of the measurements to the Police and the Road Transport Inspection, which are authorized to control offenses and enforce appropriate penalties. In this regard, we actively cooperate with services, as evidenced by, among others, additional patrols paid by the city on the Poniatowski Bridge until six speed cameras are installed there.



1.37 million
measurements
carried out

62%
of registered
vehicles exceeded
speed limit

Poniatowski Bridge

One of the 'fastest' and thus dangerous points in Warsaw is the Poniatowski Bridge. As shown by the speed tests carried out in 2018 there, out of 47,526 cars that drove through the bridge within 24 hours, only 7,545 drove in accordance with the regulations. The rest, as many as 39,981 drivers, or 84% of all, was going faster than the allowed 50 km/h. As many as 370 drivers should lose their driving license, since they accelerated their cars to at least 101 km/h, while the record holder was speeding 180.2 km/h! That is why we decided to install six speed cameras on the bridge. In January 2021, we signed an agreement with the

contractor, according to which the new equipment should start operating within six months of its conclusion. The devices will be placed near the towers and tram stops – three on both sides of the bridge. Their installation was made possible by the Mazowieckie Province Monument Conservator, who accepted the fact that they were indispensable to improve safety.



We decided to
purchase and install
6 speed cameras

Accidents on the Poniatowski Bridge



26

accidents on the Poniatowski Bridge
in 2015–2019



16

accidents due to
excessive speed



35

victims of accidents
on the Poniatowski Bridge
in 2015–2019, including
3 FATALITIES

84%

of all cars that crossed the Poniatowski
Bridge within 24 hours during the traffic
volume measurements in 2018
exceeded the speed limit.

180 km/h

the highest speed recorded during
the traffic and speed measurements
on the Poniatowski Bridge in 2018.

Changes in traffic organization

By improving safety, we make changes to traffic organization. This includes transferring parking from the pavement to the road, marking out new ground pedestrian crossings, building refuge islands for pedestrians or installing speed bumps. As well as renovating pedestrian crossings.

The audit of all 4,093 unsignalized pedestrian crossings in the city, completed in 2020, allowed for their thorough safety check. It provided us with answers what we should improve – first of all, at 481 pedestrian crossings qualified for quick action, rated mostly with 0 and 1 points on a five-point scale.

We have been implementing changes based on the audit since 2016, when the first zebra crossings were examined. It was no different in 2020, which turned out to be special in terms of the number of changes introduced. We improved security at 104 zebra crossings, including 57 'zeros' and 'ones.' The first place was taken by Obozowa St. There, we made corrections at as many as 16 pedestrian crossings, including 15 graded with 0. The pedestrian crossings were equipped with islands enabling crossing the road and the tram tracks in parts. Speed bumps appeared in front of the zebra crossings. Previously, the width of the single-lane road induced some drivers to overtake and exceed speed.

We also 'glued' speed bumps to the road at Radiowa St, Dorodna St. and Roentgena St. At the latter, we improved safety at 9 pedestrian crossings, including 7 rated with 0. In turn, at Jana Pawła II Av. and on a fragment of Chałubińskiego St., we repaired 11 zebra crossings (including the creation of refuge islands) and 7 at Kijowska St. (construction of traffic lights).

In 2020, we continued the programme of moving parking from the pavement to the road. We implemented that change at Odyńca St. on the section from Niepodległości Av. to Puławska St. and at Ludna St. between Czerniakowska St. and Solec St. Thanks to that, pedestrians gained space to move freely. The drivers did not lose anything be-

cause they have 64 legal parking spaces at their disposal at Odyńca St. and 61 at Ludna St. – 26 more than before. At the latter, we also renovated the pavements.

The convenience of passers-by has also been improved by ground pedestrian crossings marked out by us where it was previously impossible to cross the road. Especially for the elderly, disabled or parents with children in prams, it is important to replace tunnels and footbridges with zebra crossings. In the last 7 years, we have created a total of 27 of such crossings. In 2020, we marked them out in three locations, including at Czterdziestolatka roundabout.

The plan is to mark out further pedestrian crossings that will allow for a more efficient crossing of the road. They will appear, among others, in the vicinity of Dmowski roundabout.

Where pedestrian crossings already exist, we are building refuge islands and elevated pedestrian crossings. New refuge islands appeared e.g. at Dominikańska St., Hoene-Wrońskiego St. and Obozowa between Księcia Janusza St. and Prymasa Tysiąclecia Av. Pedestrian crossings going through the tops of subordinate streets are raised to the level of the pavement – this is what happened, e.g. at Górczewska St. and Saska St. or Unii Av. and Reymonta Av.

To calm down and organize the traffic, we also inserted barrier posts where it was urgent to secure pavements and pedestrian crossings from parking cars. In the long run, we try to separate them with greenery to obtain the appropriate aesthetic effect. An example is Międzynarodowa St. where instead of posts we created 180 m² of green space.



refuge island



shortened crossing



elevated crossing



speed bumps

Street lighting

Road safety depends on good visibility after dark. Among over 116,000 streetlights on Warsaw streets, some are worn out and do not meet the current standards. Therefore, each year we modernize old lighting and install new where it is missing.

In 2020, like in previous years, we continued the work on improving lighting in the city. We replaced 669 streetlights and installed 1,881 modern, energy-saving LED luminaires (including 193 in tunnels). In the majority of the cases, it was also associated with the improvement of the accompanying infrastructure – laying new cabling and control devices.

LED luminaires bring great benefits. They improve visibility after dark while consuming less electricity and emitting less harmful substances. Savings can be particularly impressive. The luminaires replaced in 2020 consumed an average of 3,002 MWh per year; after modernization, the consumption will decrease to 557 MWh, which translates into yearly savings at the level of PLN 1,290,000 gross, i.e. 81%. We allocated over PLN 10.7 million to the modernization of lighting. Thanks to much better lighting parameters, it is possible to use a smaller number of luminaires.

In 2020, as part of the ongoing renovation of lighting, new LED luminaires appeared e.g. at Konwiktorska St. and Lucerny St. or at Jerozolimskie Av. We replaced sodium lamps with LEDs also in four tunnels: Trasa Łazienkowska at Na Rozdrożu Square (93 instead of 374 pcs), under Puławska St. at the level of Rzymowskiego St. (40 instead of 87 pcs), at Złota St. and Jana Pawła II Av. (28 instead of 126 pcs) and in two road crossings and the pedestrian route at Globusowa St. (32 instead of 100 pcs).

A significant part of the new posts and luminaires was installed under the 'SOWA – oświetlenie zewnętrzne' ['OWL – Outdoor Lighting'] programme. We carried out the work at nine streets and two road junctions – after dark, the visibility improved at Jagiellońska, Jarzębskiego, Lektykarska, Krucza, Stryjeńskich, Sosnkowskiego,

Szczęśliwicka, Płowiecka and Trocka St. with Borzymowska St. and the junctions of Trasa Łazienkowska with Wisłostrada and Wał Miedzeszyński St., where we installed 370 streetlights and 841 lamps in total. In 2021, 'SOWA' will end with the replacement of lighting at Sokratesa St. and Przy Agorze St. The budget of the entire project amounted to PLN 12.5 million. Most of that amount (PLN 10.8 million) was covered by a long-term loan from the National Fund for Environmental Protection and Water Management, which was disbursed in two instalments. Its repayment has already begun and will last until 2026.

At the end of 2020, we concluded a tender for the replacement of approx. 40,000 luminaires throughout Warsaw.

It will be the largest operation of this type in Poland – it will be carried out by LUG Light Factory from Zielona Góra. The company will design and then deliver and install LED lamps dedicated to our city by the end of 2022. It is about the whole devices – the light source and the housing – installed on the top of a lamp post. Thanks to LED luminaires, the capital city will be safer, and, at the same time, the electricity consumption will fall almost trice – it will drop from 51.1 GWh annually to 18 GWh. The value of the investment, amounting to PLN 32 million, will pay for itself within two years.



	Posts	Luminaries
Konwiktorska St. along the entire street	27	29
Sanguszeki St. along the entire street	27	28
Jerozolimskie Av. from de Gaulle'a roundabout to the first tower of the Poniatowski Bridge	14	74
Płochocińska St. from Modlińska St. to the railway viaduct	12	28
Lucerny St. from Wapienna St. to Mrówcza St.	24	25
Kijowska St. from Brzeska St. to Targowa St.	14	14
two road tunnels and the pedestrian route at Globusowa St.	–	32
tunnel at Złota St. and Jana Pawła II Av. – entrance to the bus terminal	–	28
tunnel under Puławska St. at the level of Rzymowskiego St.	–	40
tunnel along Trasa Łazienkowska at Na Rozdrożu Square	–	93
IN TOTAL	118	391

Jagiellońska St. from Marcinkowskiego St. to 'Solidarności' Av.	33	35
Trocka St. and Borzymowska St. from Radzyńska St. to św. Wincentego St.	65	105
Jarzębskiego St. from Broniewskiego St. to Żeromskiego St.	22	43
Lektykarska St. from Podleśna St. to Rudzka St.	23	46
Krucza St. the section from Jerozolimskie Av. to Piękna St.	36	75
Stryjeńskich St. from Płaskowicka St. to Wąwozowa St.	63	136
Sosnkowskiego St. from Kościuszki St. to Jerozolimskie Av.	56	71
Szczęśliwicka St. from Jerozolimskie Av. to Dickensa St.	45	92
Płowiecka St. from Trasa Siekierkowska to Czecha St.	27	40
the junction of Trasa Łazienkowska with Wisłostrada	–	120
the junction of Trasa Łazienkowska with Wał Miedzeszyńskim St.	–	78
IN TOTAL	370	841

IN ALL 488 1,232

Maintenance

OWL – Outdoor Lighting

Additional lighting at pedestrian crossings

Good visibility of pedestrians is of utmost importance, especially after dark. Therefore, we provide subsequent pedestrian crossings with more light.

For five years, we have been installing new posts and luminaires at zebra crossings on a large scale. In 2016, the implementation of the project started in autumn with 78 pedestrian crossings became brighter. In the following year, we were already in full swing. In 2017, we provided 334 zebra crossings with more light, in 2018 – 435 and in 2019 – 386. In 2020, we improved the brightness in 264 locations.

In total, we have already provided 1,497 zebra crossings with more light. Ultimately, we strive to provide all un-signalized pedestrian crossings in Warsaw with more light and we are already close to achieving that goal. The locations that require urgent intervention were identified in the recently completed security audit.

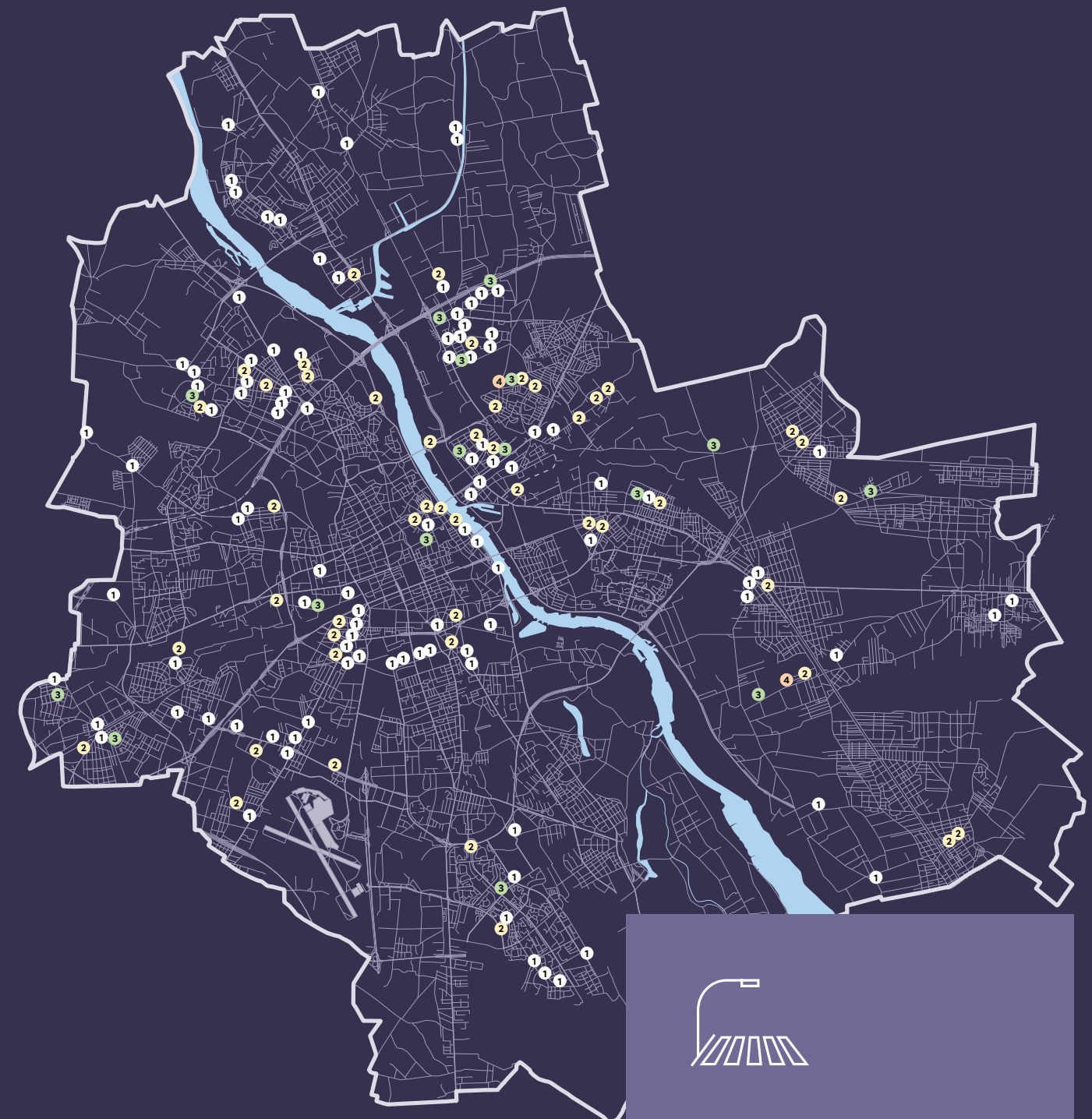
We improve the visibility of pedestrians on the lanes in two ways. The first is the installation of additional posts and luminaires that are designed to illuminate the pedestrian walking across the zebra crossing. In 2020, we

provided 116 pedestrian crossings with more light in that way. The second method is the replacement of the existing posts. In such situations, we dismantle the old posts located right next to the pedestrian crossings and put new ones in their place, which we equip with double extension arms so that one is directed at the road and the other at the zebra crossing. That type of solution, which is cheaper and does not require preparation of time-consuming design documentation, was applied at 148 zebra crossings.

However, in 2020, we provided even more pedestrian crossings with more light. The aforementioned 264 pedestrian crossings have been joined by a dozen or so that we 'brightened up' under the 'SOWA – oświetlenie zewnętrzne' programme. By replacing streetlights at 9 streets and 2 road junctions, we also took care of passers-by – we erected additional lamp posts at the zebra crossings that had not been equipped with additional lighting so far.



Pedestrian crossings provided with more light in 2020



1 location and number of crossings with additional lighting



1497 pedestrian crossings brightened up since 2016

Traffic lights

Traffic lights improve safety as well as organize the traffic and reduce traffic congestion. However, it is an expensive solution, so its installation is always preceded by a thorough analysis; as a result, they are constructed only where it is really necessary – at the busiest pedestrian crossings and intersections.

There are nearly 850 intersections and pedestrian crossings equipped with traffic lights in Warsaw. Over 570 of them (apart from the oldest ones) are the so-called adaptive traffic lights that adjust the length of the green signal to the traffic volume. Thanks to them, drivers do not have to stop at a red light when no one is crossing the road.

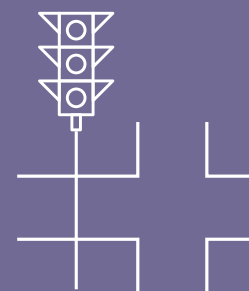
To ensure the best possible traffic safety and flow, we consistently take care of traffic lights. In 2020, we built or renovated them at 33 intersections throughout Warsaw.

New masts with light signalling devices were erected where it was necessary to calm the traffic and improve safety. This includes intersections of Krakowska Av. and Lipowczana St., Komitet Obrony Robotników St. and Zarankiewicza St. and Kajki St. with Alpejska St. and Odrodzenia St. At the latter, due to the vicinity of educational institutions, the aim was to strengthen pedestrian protection. The same applies to the new traffic lights at three zebra crossings at Kijowska St. at the level of the Eastern Railway Station.

We renovated the locations where the traffic lights were old and worn out. This is what happened, among others, at the intersections of Spisaka St. and Kompanii AK 'Kordian' St., Egipska St. and Ateriska St. or Świerszcza St. and Rybnicka St. We replaced the outdated devices there, adjusting the traffic lights to the current standards. Several dozens of signalling devices were equipped with sensors detecting pedestrians, thanks to which we switched the detection from manual to automatic. Thus, the number of locations in the city in which, thanks to sensors, pedestrians are detected immediately after reaching the pedestrian crossing increased to 338.

In 2020, signalling systems were also built by other municipal units and private investors. The Board of Urban Road Investments improved safety at the modified intersection of Grójecka St., Harfowa St. and Raclawicka St. and at the pedestrian crossings located there, and the intersection of Domaniewska St. and Samochodowa St. was equipped with traffic lights by the developer.

New or renovated
traffic lights
at 33 intersections
in the city



Integrated Traffic Management System

Each year, the Integrated Traffic Management System is expanded with subsequent signalized intersections. Currently, it comprises over 380 of such intersections.

The Integrated Traffic Management System enhances the Warsaw traffic. Its purpose is to organize and control the traffic in the supervised area, provide priority to public transport vehicles and inform road users about road incidents.

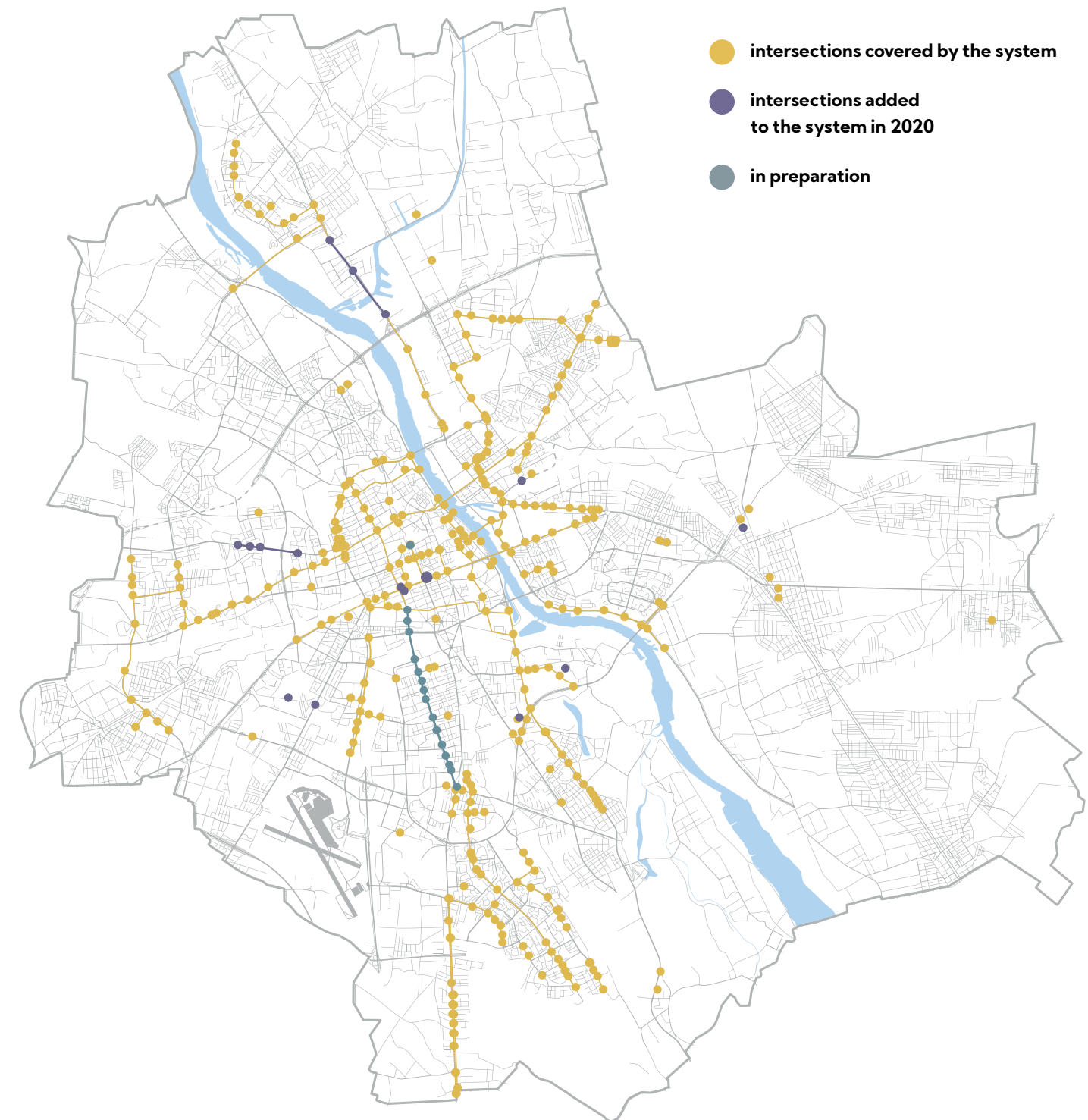
The system has been operating since autumn 2008. It consists of dozens of surveillance cameras, measuring stations and variable message signs. Thanks to those devices, it detects traffic and adjusts traffic light programmes to it. This allows road users to drive as smoothly as possible through successive coordinated intersections.

The system's list included 37 intersections at the time it was booted up. That state of affairs was short-lived, since we are constantly expanding the Integrated Traffic Management System, adding new intersections each year. In 2020, it was joined by 15 intersections, including three along Modlińska St. (with Ekspresowa St., Kowalczyka St. and Elektronowa St.) and four along Górczewska St. (with Syreny, Olbrachta,

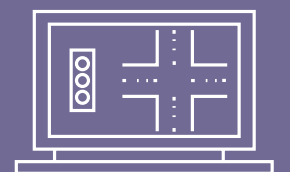
Ciołka and Góralska St.). Today, the system comprises a total of 382 intersections.

Soon, the Integrated Traffic Management System will be expanded to include new ones. We are working on the implementation of traffic organization projects, renovation and adaptation of traffic lights to work in accommodation and coordination at 14 intersections along Niepodległości Av. Their preparation will allow for field work, which we want to start as soon as possible. A similar modernization will be carried out at Dmowskiego roundabout, where the system will include not only the intersection of Jerozolimskie Av. with Marszałkowska St. but also four new ground pedestrian crossings.

In 2020, we installed 53 bike totems at 30 signalized intersections. The devices prompt the cyclists how they should adapt their speed so that they do not have to wait for a green light.



Already 382 intersections are included in traffic management system





Routine maintenance

We manage over 800 kilometres of roads. It is hundreds of thousands of different elements of road infrastructure. To keep them in proper technical condition, we maintain them all year round and almost round the clock.

- 54 Emergency Breakdown Services
- 56 Bridge structures
- 58 Underground parking lots
- 60 Right of way
- 62 We remove illegal advertising
- 64 Municipal Information System

Emergency Breakdown Services

Without the ZDM Emergency Breakdown Services, the city would not function as it should. Our employees watch over the proper condition of road infrastructure 24 hours a day, seven days a week. In 2020, we secured over 500 failures that directly threatened traffic safety.

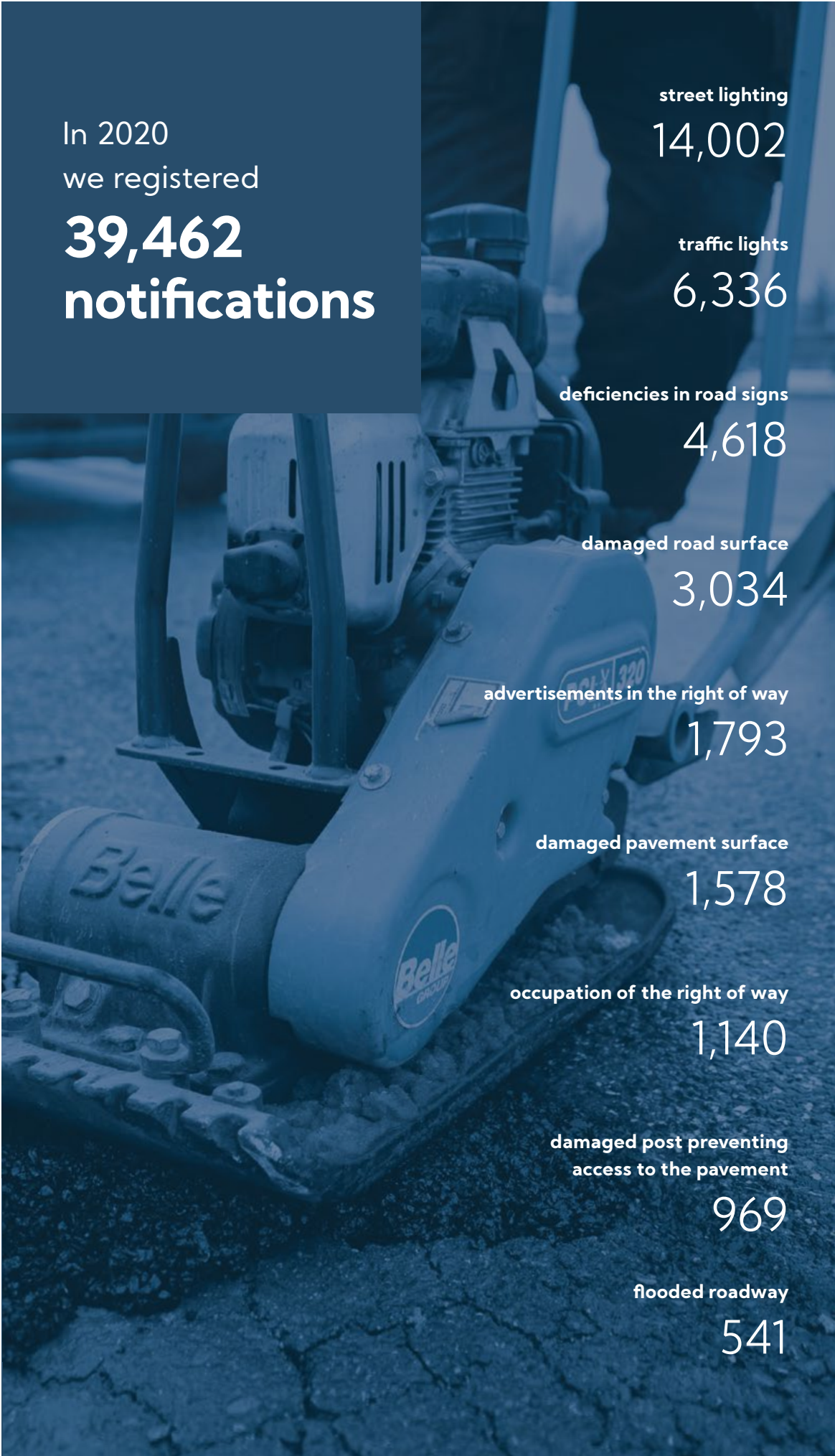
Interventions result not only from daily patrols but also from notifications received from citizens and other municipal units. After receiving the signal, we immediately go to the site – in the event of damage to the road or pavement, first we secure the area of failure, then we proceed to repair. In 2020, like in previous years, the elements we repaired most often was lighting and traffic lights; we also added road signs.

We were called to damaged road surface several thousand times. We used 5,625 kg of cold asphalt mix to protect the spillings. This easiest and fastest method was used to remove losses on a temporary basis. Ultimately,

we entrust our contractors with permanent repairs with the use of mastic asphalt. In 2020, we made 549 interventions regarding varied incidents in the right of way that directly threatened traffic safety.

Not all notifications concerned the roads managed by ZDM. If a breakdown occurs on a road subject to another entity, we secure the place immediately and then notify the road’s administrator.

The most popular method of reporting defects is the 19115 Warsaw City Contact Center. More than half of the notifications reached us via that channel. In total, we received 39,462 notifications concerning various matters.



Bridge structures

Bridges, viaducts, footbridges, tunnels, underground passages and noise barriers are very important elements of road infrastructure. Every day, they serve millions of Varsovians and visitors. Therefore, when carrying out routine maintenance and repairs, we take care of their proper technical condition and improved accessibility.

There are 545 bridge and civil engineering facilities in Warsaw, including 65 bridges. We control them on an on-going basis so that citizens can use them safely. Our work consists in maintenance and local repairs of bituminous surface, replacement of pre-cast beams, repairs of concrete span surface or repairs of energy-intensive barriers. We provide anti-corrosion protection and clean noise barriers, cornices, railings or bridge facades.

2020 saw general renovations of bridge facilities. We completely modernized the viaduct along Ostrobramska St. over Stanów Zjednoczonych Av. (more in the chapter ‘Renovations and modifications’) and the brick viaduct of the Józef Poniatowski bridge. Its renewal was necessary because due to its age (it was built in 1910) and exploitation, the technical condition of the facility deteriorated.

As the viaduct is a monument, the work was very complicated and required an extraordinarily meticulous approach. Before the old, worn out welds and stone elements were carved out and then replaced with new ones, we had cleaned them to assess their actual condition. Then we uncovered and repaired the wings of the bridge. We completely renovated the damaged fragments of the railings; we covered the steel elements with a special anti-corrosion protection. We also laid new road surface and built a new drainage system.

In 2020, we also worked on other bridges. We were carrying out maintenance work related to the replacement of expansion joints. We equipped the viaducts along Wolska St. (at the intersection with Kasprzaka St. and Redutowa St.), Wybrzeże Gdyrskie (near the intersection with Gwiazdzista St.), Dolina Służewiecka (over KEN Av. and Koński Jar St.) and Trasa Siekierkowska (on the flyover with Płowiecka St. and two facilities at Czerniakowska St.) with new expansion joints.



Cleaning of
604,400 m²
of bridge
structures



Number of bridge and civil engineering facilities



65
bridges



39
flyovers



161
viaducts



74
footbridges



35
tunnels



128
culverts



33
lifts



84
platforms



4
escalators



43
underground passages



58 km
of noise barriers

Underground parking lots

ZDM has two underground parking lots for public use. Both are located in the city centre and available for short-term parking. After purchasing a monthly subscription, one can also leave the car for a longer time. In 2020, we carried out a general renovation of the facility under Waryńskiego St.

Parking in the city centre is sometimes mission impossible. Therefore, underground parking lots can be helpful. ZDM administers two, which in total are able to accommodate over half a thousand cars.

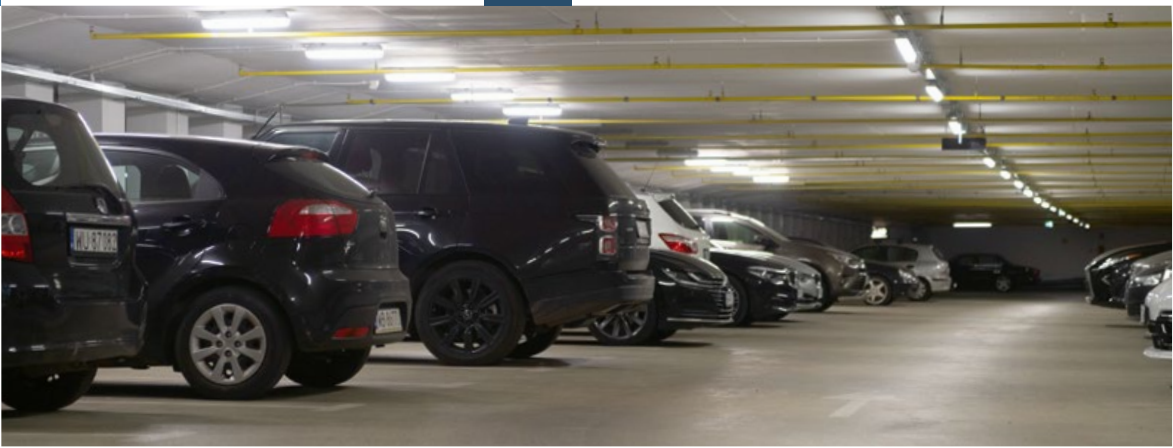
The first public garage is located near the Supreme Court under Krasińskich Square, on the side of which the entrance is located. It is equipped with two lifts enabling access for persons with disabilities. It has capacity of 407 cars.

The second underground parking lot with 130 parking spaces is located under Waryńskiego St. – above the ceiling of the Politechnika metro station. You enter it from Progi St., on the side of Polna St. We launched it in 1996; however, since it had undergone only minor repairs for nearly a quarter of a century, we carried out a major renovation in 2020.

We replaced the entire electrical installation. We connected new lighting to the cables. We replaced 118 sodium lamps with 139 LED luminaires, but we located them not above but between the parking stands. We combined the new lights with 40 motion detectors that activate the four nearest LEDs where the car is parked. The same applies to 60 LED luminaires in the traffic zone.

We installed 12 illuminated evacuation boards on the walls and 18 ceiling luminaires on the ceiling, which turn on in an emergency when, for some reason, there is no power from the main power source. We increased the number of carbon monoxide detectors from 2 to 16 – we placed them throughout the facility and connected them to the ventilation room serving the metro station.

We also installed 14 new cameras. There are six cameras more than prior to the parking lot's improvement. They are modern and react to movement. As a result, it is not only the nearest lamps above the road that light up; when someone enters the parking lot, the eye of the closest camera is also focused on that person.



Parking lot under Krasińskich Square



407
parking
spaces



5 PLN
Each commenced
parking hour



Cost of 24-hour parking

40 PLN 25 PLN

Cost of weekend parking
(from Friday 7:00 pm until Monday 7:00 am)

80 PLN 40 PLN

Price of a 24-hour
monthly subscription

500 PLN 190 PLN

Parking lot under Waryńskiego St.



130
parking
spaces



5 PLN
Each commenced
parking hour

Cost of 24-hour parking

40 PLN

Cost of weekend parking
(from Friday 7:00 pm until Monday 7:00 am)

80 PLN

Price of a 24-hour
monthly subscription

700 PLN

Right of way

On the roads managed by ZDM, you can find a number of facilities unrelated to the road function. Those are, for example, commercial stands, kiosks and advertisements. In order for them to work in harmony with the urban space, we grant permissions to occupy the right of way on the basis of clearly defined rules. Due to the pandemic, 2020 differed significantly from previous years in terms of fees and issuing decisions.

Businessmen have been hit hard by the coronavirus and the resulting lockdown. The introduced restrictions affected especially small entrepreneurs, including those using urban space.

Therefore, on the initiative of the mayor of Warsaw, Rafał Trzaskowski, the city councillors decided to lower the rates for the use of the right of way first by half and then by 75% for those who applied for a permit to set up a restaurant or cafe garden. In turn, the discount for permits for the organization of marketplaces, commercial pavilions, kiosks, signs and awnings, advertising columns as well as information and advertising displays amounted to 50%. The reduced rates will apply also in 2021.

In 2020, we issued 498 decisions allowing for setting up a restaurant or cafe garden for over 400 entities. Although this group included large chain stores, it was mostly small restaurants, for which the reduction of the fee was a great help.

However, this is not the end. In order to protect the interests of the smallest Warsaw entrepreneurs, by the order of the mayor, we introduced a 'grosz' rate (PLN 0.01 per m² per day) for the occupation of the right of way by the facilities in which – as a result of the government restrictions resulting from the pandemic – no business could be conducted and which could not be removed overnight. The 'grosz' rate was established in the event of the so-called hard lockdown, i.e. in the case the regulations would explicitly forbid a specific type of activity. In such a case,

thanks to this decision, it is particularly the owners of the kiosks and pavilions conducting small retail sales in the right of way (including the pavilions in the underground passages) whose facilities, despite the ban on conducting business activity, would still occupy public space that would benefit from this credit.

Aid was also obtained by those who paid for commercial stands near Warsaw cemeteries during the All Saints' Day period. Since the government decided to close the necropolises on 30 October, the capital city council made it possible for such entrepreneurs to sell flowers in specially designated locations in the city as well as reimbursed the fee in the case they had previously obtained decisions to use the right of way to sell next to the cemeteries but did not use them. As a result, we issued twice as many such decisions – first authorizing and then cancelling. Their total number amounted to 915.

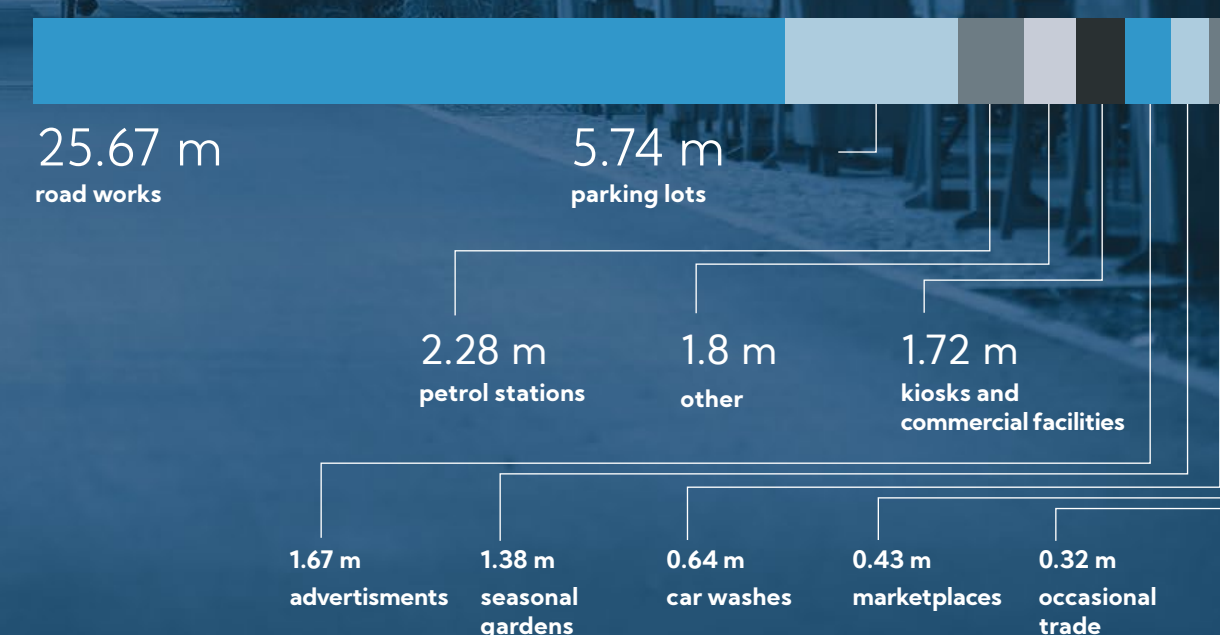
In 2020, we issued 2,803 decisions allowing the operation of facilities in the right of way unrelated to its function. Most of the decisions concerned commercial stands (710), followed by kiosks (548) and restaurant gardens (498).

A significant part of the issued decisions concerns facilities related to the road function. Those are mainly road works (including construction of connections and underground networks) but also commercial and community parking lots, car washes or petrol stations.

In 2020, we issued **2,803 decisions allowing the operation of facilities in the right of way unrelated to its function** including:



Proceeds of PLN 41.6 m from the occupation of the right of way including:



We remove illegal advertising

They deface and interfere with the landscape and sometimes even pose a threat by blocking visibility. Illegal advertisements are the bane of our roads, which is why we continuously eliminate them. In 2020, our employees carried out over 13,000 inspections and removed 1,100 advertising media.

Illegal advertisements do not only affect drivers. They also often make life difficult for pedestrians. Especially the so-called trippers located on the pavements, which 'deprive' the passers-by of space. Therefore, we constantly monitor the use of the right of way for activities unrelated to the road function. We pay attention to whether the objects located there are placed in such a way that they do not hinder moving around. We also check whether they have the appropriate permit.

In 2020, we conducted a total of 13,510 inspections. There were slightly fewer of them than in previous years, but it was influenced by the pandemic and the related restrictions as well as by the lockdown. Nevertheless, we were successively checking the right of way of the streets we manage. 8,518 advertisements were inspected, 1,105 of which were removed.

Additionally, we managed to remove 688 other objects from the right of way. Among them were, e.g. containers for second-hand clothes, scooters or makeshift bike stands.

Occupying the right of way without our consent results in a penalty. During the year, we initiated 1,847 administrative proceedings aimed at punishing the owners of illegal media and issued 1,441 administrative decisions imposing penalties on the owners of illegal objects. The proceeds from the fines for occupying the right of way amounted to PLN 2.5 million.



Proceeds of
PLN 2.5 million
from the fines
for occupying
the right of way.



Removed:



1105
illegal
advertisements



688
objects in the right
of way
e.g. containers for
second-hand clothes,
scooters and bike stands

Municipal Information System

Good signage is essential, as it helps citizens and tourists to move efficiently around the city. Therefore, every year we update, modernize and maintain almost 94,000 elements making up the Municipal Information System. This includes address plates, maps, signposts or information about important sites in Warsaw.

The Municipal Information System has been operating since 1996. This set of characteristic signs visible on every street and building in the city has become so part of the capital city's landscape that today it is difficult to imagine moving around without it. The elements that make up the Municipal Information System make it easier to reach housing estates or streets and at the same time inform about their patrons and the history of the area.

As the city grows almost continuously, the Municipal Information System is constantly expanding. Address boards, street boards, information posts, Metered Parking Zone boards, pictograms, directional boards to districts, stations, etc., two-sided information boards, wall-mounted information modules and Paid Information Points are constantly increasing and there is a total of 93,750 of them.

In 2020, we installed 1,109 new markings. Repair, maintenance, update and replacement covered 8,021 elements of the Municipal Information System. In addition, we issued opinions on 321 traffic organization projects (in relation to the elements of the Municipal Information System), and the total number of cases in the department dealing with the Municipal Information System exceeded 2,000.





Development and projects

Our main task is to maintain the infrastructure at an appropriate level. However, we also implement larger projects, as a result of which we improve safety and comfort of road users and the aesthetics of the urban space.

- 68 Extension of the Metered Parking Zone
- 70 E-control
- 72 Veturilo
- 74 Winter illumination

Extension of the MPZ

In 2020, the Metered Parking Zone (MPZ) was extended to Praga-Północ and a part of Wola and now comprises approx. 37,300 parking spaces. In addition, we launched e-control and introduced a second mobile payment operator. For the first time in several years, the rates of fees and penalties also changed.

The primary goal of the Metered Parking Zone [Strefa Płatnego Parkowania Niestrzeżonego], which has been operating for over 20 years, is to serve the local community and make it easier for citizens to park their cars near their homes. Secondly, it is supposed to allow paid parking for commuters. Its aim is to increase the rotation of parking spaces in the city centre so that those who want to stop there have a place to do it.

By virtue of a resolution adopted by the capital city councillors, the zone was extended in 2020. Since 7 September, the zone has been covering a significant part of Praga-Północ (Stara and Nowa Praga bounded by Jagiellońska, Ratuszowa, 11 Listopada St., railway line, Radzy- mińska and Folwarczna St.) and Wola between Okopowa St. and Towarowa and Prymasa Tysiąclecia Av. (along with Grabowska St.). In Praga, the changes covered 45 streets (approx. 23 km), and in Wola – 72 (approx. 45 km). In the first district, the number of parking spaces amounted to approx. 3.1, and in the second – 4.7. In total, approx. 37,300 vehicles can park in the Metered Parking Zone.

Although the zone’s aim is to protect the covered area from an excessive number of parked cars, it also brings proceeds that are allocated to the development of road infrastruc- ture. In 2020, the proceeds from the fees for parking in the zone, underground parking lots and commercial restricted parking spaces amounted to over PLN 77 million, and addi- tional fees for unpaid parking tickets amounted to another PLN 13.9 million. The total proceeds in 2020 amounted to almost PLN 93.4 million, PLN 7 million less than in 2019. This was due to the coronavirus pandemic. The introduced re- strictions resulted in a significant reduction in traffic; in ad- dition, we decided to cover the employees of health care facilities (hospitals, clinics or social care homes), who have direct contact with the patient, located in the Metered Parking Zone with the zero-fee rate.

The pandemic also does not allow us to clearly assess wheth- er the number of the drivers avoiding fees has decreased. In 2020, we issued approx. 326,000 additional fee documents, 37,000 more than in 2019. On the one hand, we managed to double the frequency of controls, and on the other - higher fines deterred some dishonest drivers.

The popularity of mobile payments is undoubtedly on the rise. The share of the fees paid using the application increased from 22 to 25% during the year. That form of payment was facilitated by the introduction of a second operator offering such a service in April 2020. In the pandemic era, mobile pay- ment is also the fastest and safest payment method.

For 2021, we have prepared further changes to the paid park- ing zone. From the beginning of January, new rates and oper- ating hours of the zone apply. We have also taken preparato- ry activities to extend the Metered Parking Zone to Żoliborz and Ochota; the matter was consulted with citizens in the autumn of 2020. Accordingly, we plan to purchase another four e-control cars.

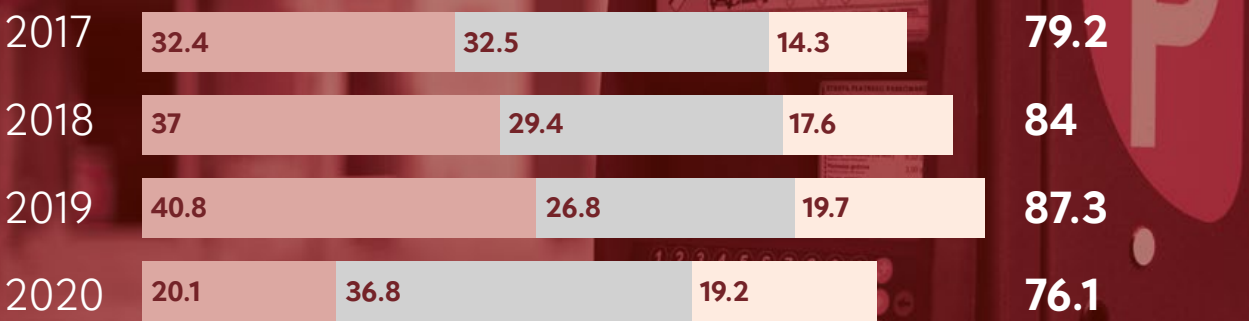
average value of the parking ticket: **PLN 5.72**

average value of the mobile fee **PLN 6.48**

253 days of validity of the paid zone in 2020

Payment methods in MPZ

PLN million

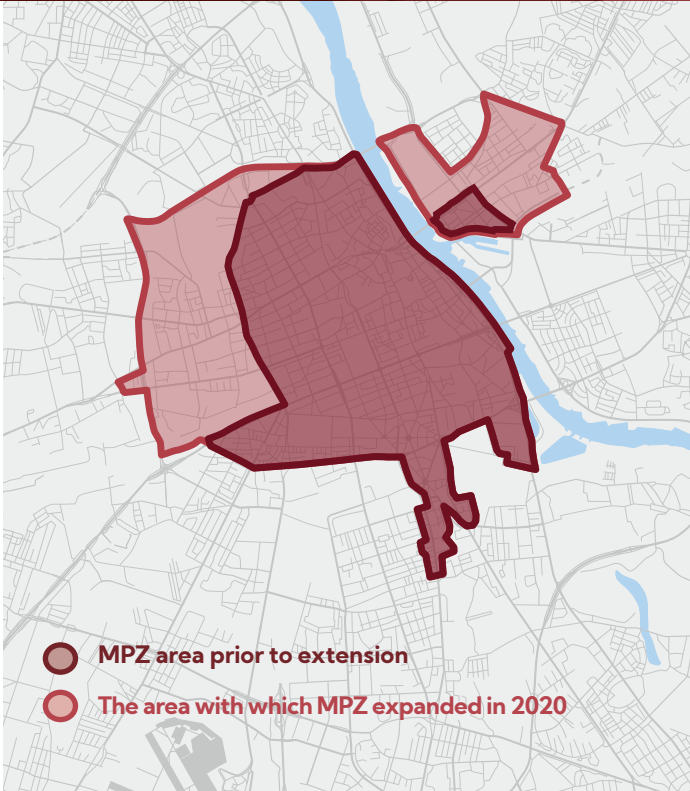


proceeds from parking: **PLN 93,409,000** including:

PLN 76,134,000 proceeds from parking in MPZ	PLN 1,182,000 proceeds from resident subscriptions	PLN 1,034,000 flat fee proceeds from parking at guarded parking spaces (so-called white restricted parking spaces)
PLN 13,902,000 proceeds from additional fees	PLN 1,155,000 proceeds from underground car parks	

MPZ in Warsaw

- **area of 27.5 km²**
(5.31% of the city’s area)
- **37,300 parking spaces**
- **260 km of streets**
- approx. 45 km of streets in the extended MPZ in Wola
- approx. 23 km of streets in the extended MPZ in Praga-Północ
- 72 streets in the extended MPZ in Wola
- 45 streets in the extended MPZ in Praga-Północ



E-control

In 2020, we launched the e-control system for paid parking. Warsaw became the first Polish city to see cars equipped with cameras and sensors on the streets to help foot patrols control fees. As a result, the controls' efficiency has more than doubled.

On 7 January 2020, two white, electric Nissan LEAFs with characteristic 'boxes' on the roof appeared for the first time on Warsaw streets covered by the Metered Parking Zone (a third joined them at the end of the summer holidays). Those cars immediately caught the attention of passers-by, and, in time, it was also drivers that started to watch them more closely. This was the goal – the 'boxes' are equipped with a laser, GPS and a camera that scans the registration numbers of the parked cars and transmits the data to our database to verify the fees for the vehicle.

In 2020, first two and then three e-control cars (an idea implemented by the Warsaw-based company Smart Factor) drove over 66,000 km and controlled 1,342,313 parked vehicles. Practically, each of them twice, because the control consists in checking each car twice within a few minutes. This is necessary in order to exclude the drivers who have just arrived and either have gone to the parking metre to pay or they are doing it via the app.

Such controls resulted in the issue of 165,722 additional fee documents. This is just over a half of all additional fee documents issued in 2020 – the remaining 160,273 were issued by foot patrols. It is difficult to say whether the number obtained by our cars is large, because the first year of e-controls coincided with the pandemic, when all areas of life were disturbed. Generally, the statistics for 2019 (289,010 penalties issued by 25 two-person foot patrols) cannot be compared, mainly due to lower traffic due to the Covid-19 restrictions. In addition, in 2020, the amount of the fine changed (from PLN 50 to PLN 250) and so did the area covered by the zone, and since the end of August, we have been using a third car. We estimate that one car performs the work of 10 foot patrols.

E-control vehicles are also a good tool for collecting data on the occupancy of parking spaces. This is useful,

for example, when analysing the Extension of the Metered Parking Zone. E-control cars are also equipped with an RFID system, which allows them to remotely control the vehicles that park in the zone on the basis of N+ cards or Insurgent Cards – the readers detect the parking card left in the car independently.

Although catching dishonest drivers is already based mostly on e-control cars, they will not completely crowd out foot Metered Parking Zone patrols, since there are places where our cars cannot easily enter or see the license plate. In addition, controllers are more and more often needed on-site, where they verify e-control photos behind the desk and send calls for payment to dishonest drivers.

The entire project (ordering cars with equipment plus software, training and system maintenance for 3 years) is co-financed by the EU funds under Virtual WOF, i.e. the Warszawski Obszar Funkcjonalny [Warsaw Functional Area] programme.

In 2020, e-control cars
drove over
66,000 km
and controlled
over 1.3 million
parked vehicles



Veturilo

The ninth season of Veturilo was marked by the coronavirus. Due to the restrictions related to the pandemic, it got off to a false start, and the system, instead of developing further, was temporarily slowed down. However, the city bikes were not out, because in 2020 Varsovians and tourists rented them over 3 million times.

The Warsaw Public Bike first hit the streets in 2012. Back then, the system comprised just over a thousand bikes and 55 stations. It has developed significantly since then – in 2020, 5,577 standard bikes, 110 electric bikes, 60 Veturilko children’s bikes and 45 tandems as well as 398 stations were at the disposal of two-wheel lovers.

The number of rentals was clearly affected by the pandemic that broke out in Poland at the beginning of March, right after the launch of the season. Introduced restrictions included suspending the operation of the city bikes throughout the country. The factors that greatly affected Veturilo were the forced pause between 1 April and 5 May, the fact that many people started working from home afterwards as well as the lack of students and tourists. In the ninth season, the users rented bikes 3,180,000 times, almost twice less than in 2019. They rented them most often on the first Saturday and Sunday of July – only in those two days the bikes were used 55,651 times. In total, we have recorded 28.8 million rentals since the inauguration of the system.

Despite the pandemic, over 64,500 new users joined Veturilo in 2020. Over 31.5% of people used bikes from 6 to 40 times a month, and 1.6% even more often. Almost 92% of the rentals were made via the mobile application, 3 percentage points more than in 2019. Citizens of the capital city and tourists most often used the system between 4:00 pm and 7:00 pm; it was then that the daily rental share would reach up to 30%.

In 2021, Veturilo serves the citizens for the 10th time. However, the anniversary season is an interim one – the pandemic also indirectly contributed to the postponement of the plans to expand and modernize the system. In 2020, we wanted to select an operator for the years 2021–2028, who would manage a fleet of nearly 6,500 new bikes and over 500 stations, but the financial crisis caused by the coronavirus meant that those assumptions could not be achieved. Ultimately, thanks to a bridging tender, we maintained the continuity of the service, and the current contractor remained the operator under a new short-term contract. In 2021, we plan to re-announce the tender for the target bike system.



5,792 bikes

were at the disposal of citizens in 2020



Most Popular Routes in 2020

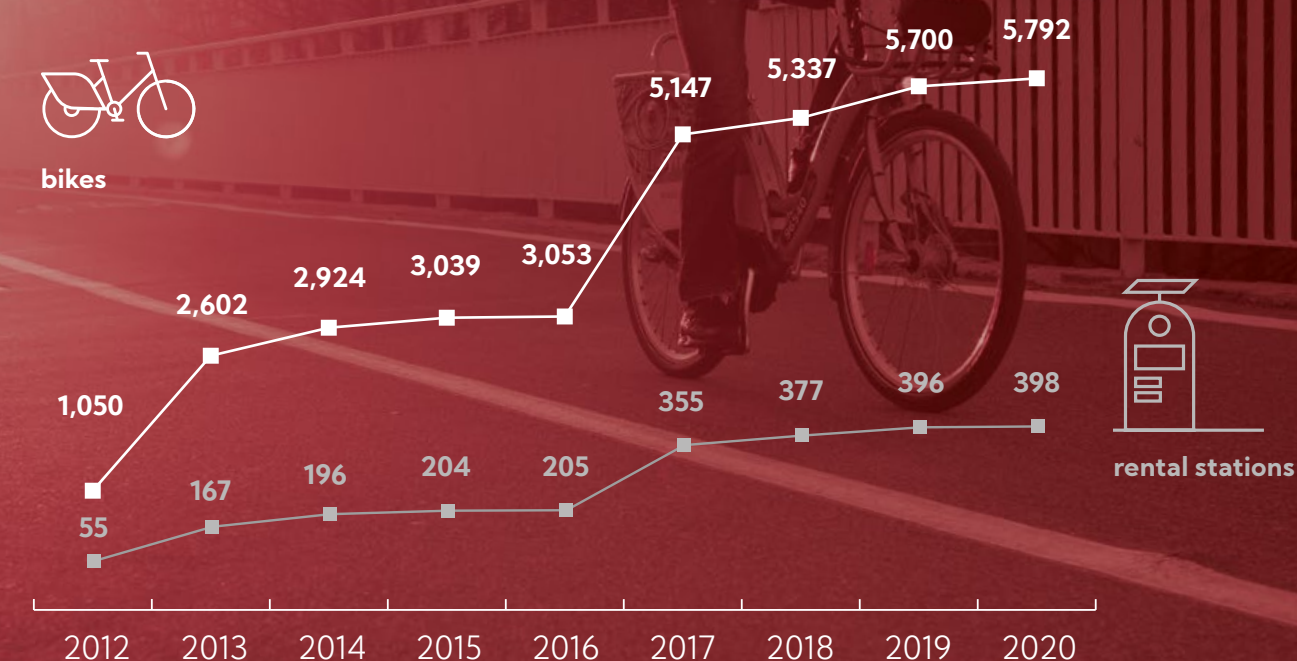


Most Popular Stations in 2020

number of rentals and returns



Number of bikes and rental stations 2012–2020



Winter illumination

Christmas illumination is the winter showpiece of Warsaw. Therefore, in 2020, despite the pandemic, we did not want to give it up. Although it was more modest than in previous years, it contributed to the capital city's unique Christmas vibe.

In the years 2016–2019, the illumination lit up over 20 km of streets. In 2020, its scale was much smaller – we limited ourselves to embellishing only Zamkowy Square and Krakowskie Przedmieście St. (the decorations at Nowy Świat St. were managed by the Nowy Świat Association gathering the local merchants, whereas those in the Old Town were hung by the Public Area Administration). Such a difficult decision was made by the mayor of Warsaw, Rafał Trzaskowski, in the face of the coronavirus pandemic and the deterioration of the city's budget caused by it.

Therefore, we opted for a minimalist variant, although still impressive. 9 stand-alone decorations were placed at Zamkowy Square and Krakowskie Przedmieście St. The main one was a 27-metre-high Christmas tree, which was placed near the Royal Castle. The others were a 'balloon seller,' 'Warsaw barrel organ,' 'horse tram,' 'chess pieces on a chessboard,' 'rotating carousel,' 'lovers' gazebo,' 'greeting card' and a 54-metre-long 'light tunnel.'

Like every year, we decorated streetlamps. 108 lighting poles at Krakowskie Przedmieście St. and 15 at Zamkowy Square were provided with Christmas decorations. We also decorated 63 trees. In total, all elements of the Warsaw decoration amounted to 1,120,000 energy-saving eco-LED diodes that consume 10 times less electricity than traditional light bulbs and are made of the highest quality materials.

Christmas illumination not only looks great but also brings tangible benefits to the city and its inhabitants. It provides additional lighting in the period when it is dark for almost 16 hours a day. In addition, it changes the grey, gloomy space of the winter city and makes the walk much more pleasant despite bad weather. In the past, the Warsaw illumination was recognized many times in European rankings evaluating such installations.



All elements of the Warsaw Christmas decoration consisted of **over 1.1 million energy-saving eco-LED diodes**





Plans for the future

Safer roads, more modern infrastructure and friendlier public space, especially in the city centre – those are our priorities for the future.

- 78 Improving safety
- 80 Five Corners Square
- 82 New Centre of Warsaw
- 84 Lighting modernization
- 86 Pedestrian and bike bridge to Praga

Improving safety

We have been putting emphasis on improving road safety for years. Changes are awaiting subsequent unsignalized pedestrian crossings that received the lowest marks in the road safety audit. Some streets will change beyond recognition.

Pedestrians are the least protected group of road users. In order to improve their safety on the road, in the years 2016–2020 we carried out an audit of all unsignalized pedestrian crossings we manage. 4,093 zebra crossings were checked and examined in great detail. They indicated 481 pedestrian crossings (they received the score of 0, 1 and in some cases 2 on a five-point scale) in the case of which priority corrective actions were necessary.

On that basis, we undertake field work. For 2021, we have planned to rebuild another 100 pedestrian crossings. More than a half are those with the lowest scores.

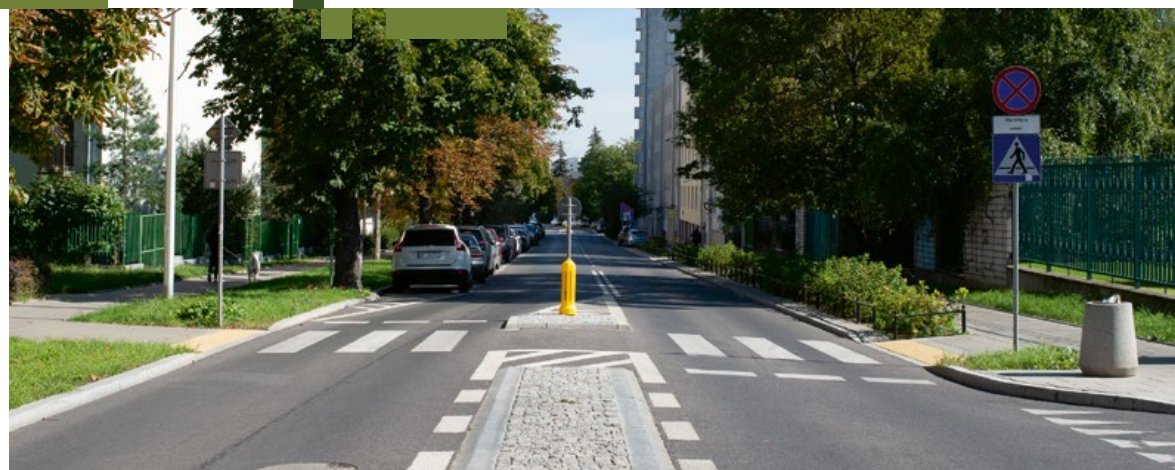
The biggest changes await Umińskiego St., Abrahama St. and Meissnera St. After the modification, which started in 2020, 25 pedestrian crossings will be safer. They will be shortened so that pedestrians will be able to cross the road faster. They will also be more visible thanks to the elimination of illegal parking.

The same changes await the northern section of Mickiewicza St., between Wilsona Square and Potocka St. In this case, we are dealing with 8 pedestrian crossings rated with

0 or 1 points. We also want to improve security at Sokratesa St., where zebra crossings have been temporarily secured with speed bumps. In the neighbouring streets, Conrada St. and Przy Agorze St., 5 pedestrian crossings will gain bigger refuge islands that will calm the traffic.

In Śródmieście, we will improve two pedestrian crossings at Ujazdowskie Av., recognized by auditors as the most dangerous in the city centre. We will also rebuild pedestrian crossings at Trzech Krzyży Square – especially those across the square, going through several busy lanes. The pedestrian crossing at Żurawia St. and Bracka St. will be provided with a safe refuge island. We will also improve a number of dangerous zebra crossings during the modification of Five Corners Square.

We are planning to build new traffic lights. The list includes the pedestrian crossings at e.g. Marszałkowska St. (at the level of Senatorska St.), Krakowska Av. (at the level of Tapicerska St.), Kondratowicza St. (at the level of Blokowa St.) and at I. Gandhi St. (at the level of Hirszfelda St. and Teligi St.). The roundabout construction programme will be continued; they will be erected, e.g. at the intersection of Kadetów St. and Poprawna St. and Łasaka St.



Five Corners Square

The intersection of Chmielna, Krucza, Zgody, Bracka and Szpitalna St., i.e. the place known as Plac Pięciu Rogów [Five Corners Square], will undergo a metamorphosis. It will become one space without separate pavements and roadways. Only buses and bicycles will be able to pass through it; pedestrian traffic will be superior here.

Five Corners Square is one of the most important public spaces in Śródmieście. The current method of managing this place is far from taking full advantage of its potential. Although as many as two-thirds of the users are pedestrians, most of the surface is occupied by roadways and undeveloped fragments. The square dominated by cars has primarily a transit function. This is what we want to change.

The renovated square will be transformed into a place that will be open and accessible to all users of the urban space. It will be a meeting point and a place for spending free time. In order to comply with that purpose, it will be ordered – it will become one space without separate pavements and roadways. Generally, only buses and bicycles will be able to pass along Krucza St. and Szpitalna St. Pedestrian traffic will be superior here.

The square floor will be made of large fibre-reinforced concrete slabs finished with aggregate. We will also introduce greenery – we will plant deciduous trees with shaped height and crown. There will be also stylistically coherent street furniture. Brightness after dark will be provided by streetlights stylized as historical ‘crosiers.’

The scope of the investment is not limited to the square itself. Szpitalna St. (to Górskiego St.) and Krucza St. (to Jerozolimskie Av.) will be rebuilt – they will gain new surface and pavements that will be widened. The little square on the axis of Krucza St. near the intersection with Widok St. will also undergo a change. Instead of a chaotic parking lot for a dozen or so cars, there will be trees and benches.



New Centre of Warsaw

The main streets in the centre of Warsaw are facing a metamorphosis. They will become a green public space, friendly to pedestrians and cyclists. This is what the New Centre of Warsaw programme is all about.

The aim of the New Centre of Warsaw project is to transform the very centre of the capital city into a comfortable, accessible and green public space. The first effects of the work became visible at Jana Pawła II Av., the central section of which gained a completely new look after the modification in 2020.

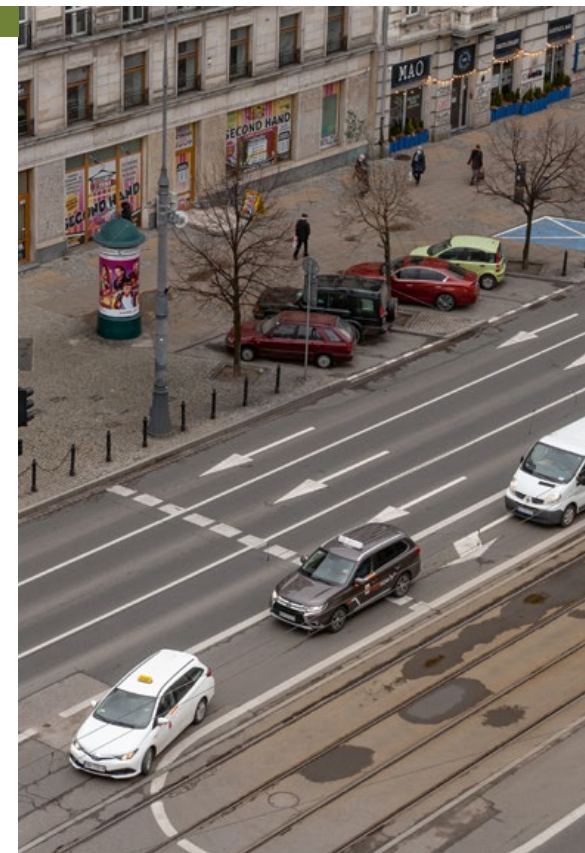
In 2021, first changes will be made at Marszałkowska St. On its western side, along Defilad Square, a bike path will be built, the pavement will also be renovated, and there will be parking spaces on the wide road. There will also be new greenery – shrubs and trees.

New ground pedestrian crossings will be built around Dmowskiego roundabout – at the level of Widok, Poznańska, Nowogrodzka and Parkingowa St. Thanks to them, pedestrians will not be forced to use the stairs. The underground passage, however, will not disappear, as it houses numerous shops and service points; it also leads to the entrance to the Centrum metro station. Apart from people with mobility problems, the change will benefit tram passengers and cyclists. Bike crossings will be created next to three pedestrian crossings that will allow cyclists to cross them on two wheels.

However, this is only the first step. In subsequent years, Marszałkowska St. will undergo much greater changes, which are to be based on the concept of 'Zielona Marszałkowska' [Green Marszałkowska], developed by the Greenery Council and consulted with the citizens. It provides for more greenery, also between the track and the road.

A bike path will be built along the entire length of the street. From Królewska St. to Bankowy Square, it will be outlined thanks to the transfer of parking to the road. Further north, cyclists will ride through Bankowy Square and they will reach Żoliborz via the bike path along Andersa St.

Marszałkowska St. will also become more accessible to pedestrians. In addition to the zebra crossings at the level of Nowogrodzka St. and Widok St., which will be built as part of the removal of architectural barriers at Dmowskiego roundabout, ground pedestrian crossings are also planned at the level of Złota St. and on the Saska Axis. Changes are also awaiting other streets in the city centre, including Krucza St.



The main streets in the centre of Warsaw will undergo a metamorphosis.



Changes at Marszałkowska St. provide for planting greenery also between the track and the road.



The redundant concrete will give way to greenery.



Missing sections of bike paths will be built.



On the west side of Marszałkowska St., a bike path will be built, the pavement will be renovated and there will be parking spaces on the wide road.

Lighting modernization

By the end of 2022, new LED lighting will appear on all main streets in Warsaw. Earlier, LED lamps will be hung on masts at road junctions. As a result, it will be brighter, safer and more economical.

The lighting of the majority of Warsaw streets was built several dozen years ago. Therefore, every year we successively replace time-worn streetlights and luminaires. The aim is to improve efficiency, reduce electricity consumption and minimize the risk of failure.

At the end of 2020, only 20% of approx. 55,000 luminaires on the streetlights on the streets under our control shone with modern LED light, installed in the last few years. By December 2022, all 'our' lamp posts will be equipped with LED lamps. We have already signed

a contract with Zielona Góra-based LUG Light Factory that will design, deliver and install approx. 40,000 luminaires for Warsaw.

Much earlier, already in 2021, LED lamps will be hung in place of sodium lamps on masts at road junctions. 2,314 LEDs will be provided by the same contractor, but we will carry out the replacement on our own. Places such as Żaba roundabout, Narutowicza Square, Cybernetyki roundabout and Zbawiciela Square will also be brighter after dark.



Eco and smart

Replacing the lighting will bring a number of benefits. Which ones?

SAVINGS

To illuminate our streets with lamps we consume **51.1 GWh** of energy on an annual basis. The price of **1 GWh** in 2021 is **PLN 530,000**, which means that the annual Public Roads Authority's bill for the streetlights is over **PLN 27 million**. After replacing the lighting with LED, electricity consumption will drop to **18 GWh**, and the light bill – below **PLN 10 million** per year. The savings will amount to **33.1 GWh** and over **PLN 17.5 million** annually.

EASIER MAINTENANCE

Maintenance and repairs of the streetlights cost ZDM approx. **PLN 10 million** per year. It is a result of large number of failures – in 2020 we received **14,000 faulty lighting** reports. Thanks to the replacement of lamps, we will significantly reduce the expenses in this area. The investment will ensure standardization of almost 90% of all devices, which will allow the maintenance person to open and close the luminaires without using tools.

ECO-FRIENDLINESS

Replacing luminaires will limit the emission of harmful substances. Carbon dioxide emissions will drop by **30,000 tons** per year. The amount of emitted sulfur oxides, nitrogen oxides and dusts will be reduced. This will allow us to obtain white certificate from the Energy Regulatory Authority worth over **PLN 4.5 million**, which can be traded on the Polish Power Exchange. They are bought there by companies producing energy from coal.

BRIGHTNESS

The most noticeable benefit for citizens will be improved visibility. After dark, the streets will become brighter and therefore safer. Old luminaires do not guarantee sufficient luminous flux – the minimum efficiency for the lamps that will be prepared for us in the LED technology is the maximum possible for sodium lamps.

REDUCED LIGHT POLLUTION

The new luminaires will have the option of setting variable parameters. This will allow us to adapt them to a specific location. As a rule, all of them will have a standardized colour temperature of lighting (**3000K**, and **4000K** on lighting masts), but the possibility of setting the flux direction will significantly reduce light pollution. Streetlights will no more disturb Varsovians living on the street side.

Pedestrian and bike bridge to Praga

The Vistula Boulevards and Praga will be connected by a new bridge. The Warsaw crossing for pedestrians and cyclists only will be one of the longest of this kind in the world. Many citizens of the capital city are looking forward to this investment.

The Vistula Boulevards are one of the most popular places to relax in the city. In order to get there, inhabitants, especially those of the southern part of Praga, have to make significant detours. In addition, the Śląsko-Dąbrowski bridge, which is difficult to access for pedestrians, does not encourage crossing the river.

The solution is a new crossing. It will connect the Vistula Boulevards with Praga at the level of Karowa St. on the left bank and Okrzei St. on the right bank. Those walking along the latter from east will find themselves on the other bank of the Vistula river within a few minutes, and going further west, they will reach the area of Krakowskie Przedmieście St.

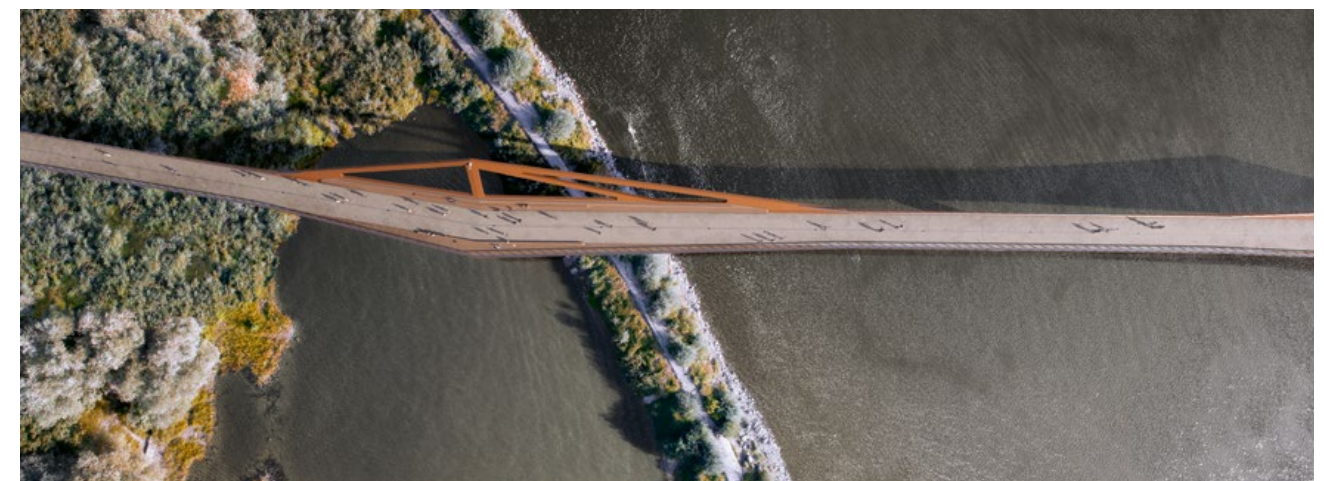
The first bridge in Warsaw for pedestrians and cyclists only will be over 450 m long (the total length of the spans will significantly exceed 500 m) and will be one of the longest in the world. The width of the structure bent in the shape of a lightning bolt will vary and at its narrowest point it will be 6.9 m, while over the river it will widen to 16.3 m.

The project of the crossing was completed in early 2021. It was developed by the Schuessler-Plan Inżynierzy studio,

selected in an international architectural competition – it refined all the details to make the facility resistant to the forces of nature. Therefore, the bridge will be a single-level crossing on seven reinforced concrete supports. On the left bank, in front of the last pillar, the crossing will widen and split into two ramps created over the coastal promenade at the level of the pavement of Wybrzeże Kościuszkowskie St. Two-flight stairs with a landing are planned between them, built into the terrace of the boulevard. Instead of corten, i.e. hard-rusting steel, the bridge will be made of steel covered with a paint imitating the colour of corten. This material will better withstand high humidity over the river.

There will be no division into a pedestrian and bicycle zone on the bridge. The planned minimum usable area is 6 m, and on the narrower ramp on the left bank – 3.5 m. The crossing will be provided with two ‘rest facilities’ with wooden seats. Lighting of the object will be guaranteed by light sources placed in the railings.

In addition to the project, we also have a valid building permit. This is an open road to a tender, which we will probably announce in the second half of 2021. The construction of the bridge will take 2–3 years.





We are available for you

Good contact with citizens is essential. In 2020, it was hampered by the pandemic, yet we still met and consulted on important matters, only remotely. The most popular forms of contact were the platform Miejskie Centrum Kontaktu Warszawa 19115 [19115 Warsaw City Contact Center] and social media, where citizens flooded us with ideas and applications. We also implemented their ideas under the civic budget.

- 90 Public consultations
- 92 Civic budget
- 94 Efficient handling of notifications from citizens
- 96 ZDM behind the scenes

Consultations with citizens

The coronavirus pandemic turned 2020 upside down. It became impossible to organize direct informational meetings with citizens; therefore, we conducted social consultations remotely. They concerned the extension of the Metered Parking Zone (MPZ).

ZDM [Public Roads Authority] relies on meetings with Warsaw citizens in person. They allow for a direct dialogue to bring the best solution. Unfortunately, due to the pandemic, such a form of contact with citizens was impossible in 2020, hence we discussed the issue of extending the paid parking zone to Żoliborz and Ochota remotely.

Consultations in both districts lasted from 29 October to 20 November. In less than a month, we conducted 10 meetings – 5 each for Ochota and Żoliborz.

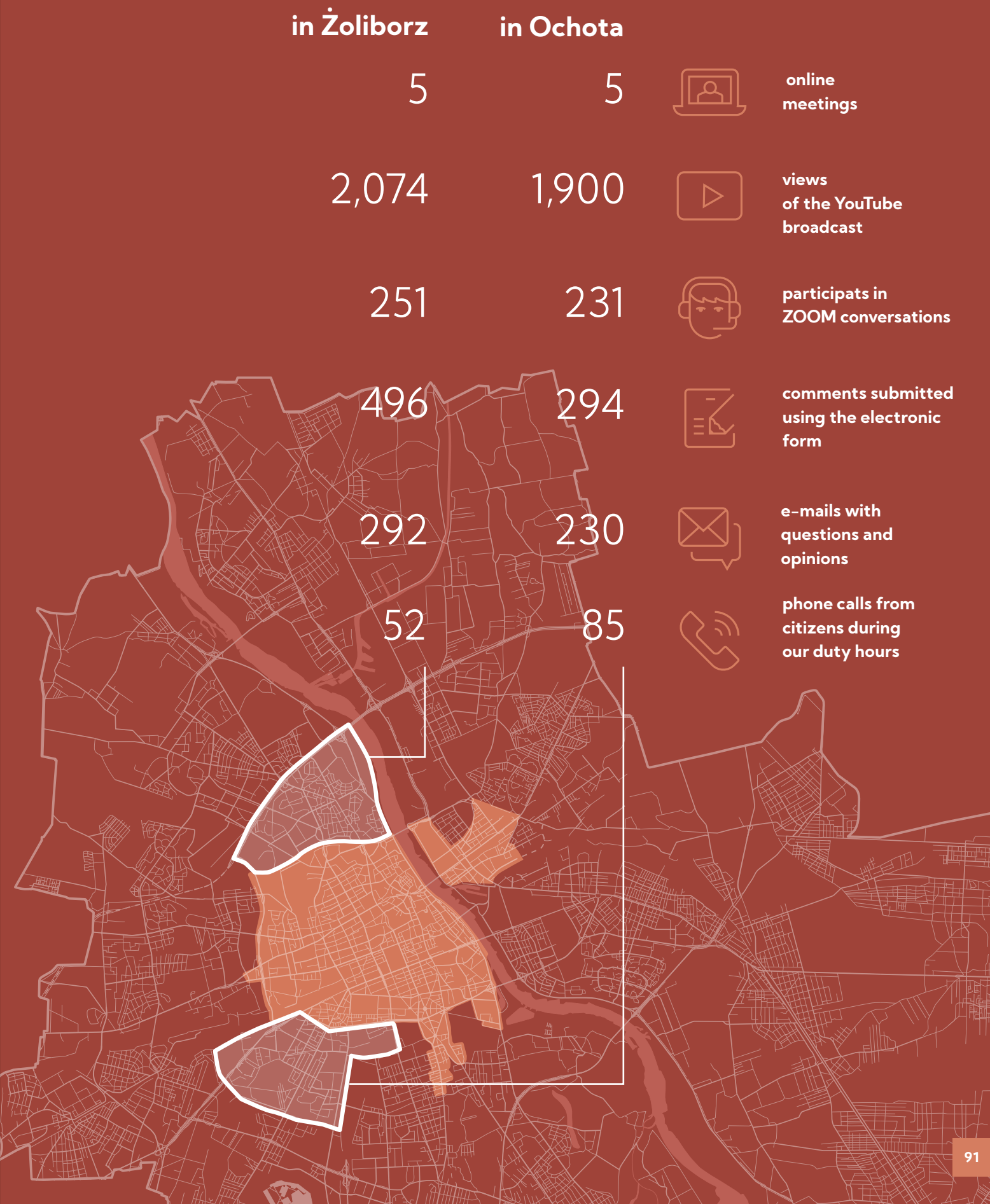
We divided the districts into smaller areas. We devoted a separate online meeting to each of them, first on YouTube, where you could ask questions in the chat, and then, in the second stage, in the ZOOM application, where you could talk to our employees and designers. The broadcasts of the meetings were very popular; during the consultations, they recorded almost 4,000 views. 251 people participated in the conversations in the ZOOM application related to Żoliborz, and to Ochota – 231 people.

During the consultations, citizens shared their opinions on the topic. In the case of Żoliborz, 496 people submitted comments using a special electronic form, and in the case of Ochota – 294. We also received 551 e-mails – 310 concerning Żoliborz and 241 concerning Ochota. In addition, 137 people called officials and designers during their duty hours.

Thanks to that, citizens could learn about the concept of changes in traffic organization and parking on Żoliborz's and Ochota's streets as well as about the results of the measurements of parking spaces and their rotation. We had conducted the analyses concerning the above issues prior to the series of meetings.



Planned extension of MPZ



Civic budget

The civic budget allows citizens to have a real impact on changing their surroundings. Over the course of 7 years, Warsaw citizens have submitted several thousand ideas to be implemented under the city budget. In 2020, we implemented further projects, including the largest one so far – erecting over 90 bike shelters near Warsaw schools.

So far, ZDM has implemented 220 civic budget projects. As we try to fit the ideas put forward by the citizens into our plans, many of them have been implemented as part of larger investments.

In 2020, this was the case in Bielany, among others. We combined comprehensive modernization of Zjednoczenia Av., which involved, e.g. construction of a bike path, with renovation of the bike path chosen by citizens' voting. Thus, cyclists gained a better connection from Młociny to the Bielany district office or the AWF complex.



We have implemented more such investments under the civic budget. Those have often been small-scale projects but of great importance for the local citizens, e.g. construction of new pavements (e.g. at Szczęśliwicka St.), pedestrian crossings (e.g. across Paderewskiego St.) or lighting (e.g. next to the route for pedestrians and cyclists on a fragment of Kasprzaka St.). However, there have also been very large projects. The largest civic budget project in the history of the city has been erecting over 90 bike shelters next to Warsaw educational institutions. We have overachieved the target, because thanks to favourable prices in the tender, we erected even more shelters than we had assumed. Each of them can accommodate at least 10 stands, i.e. 20 bicycles, under the roof. Roofed parking lots have significantly improved the comfort of using bikes.

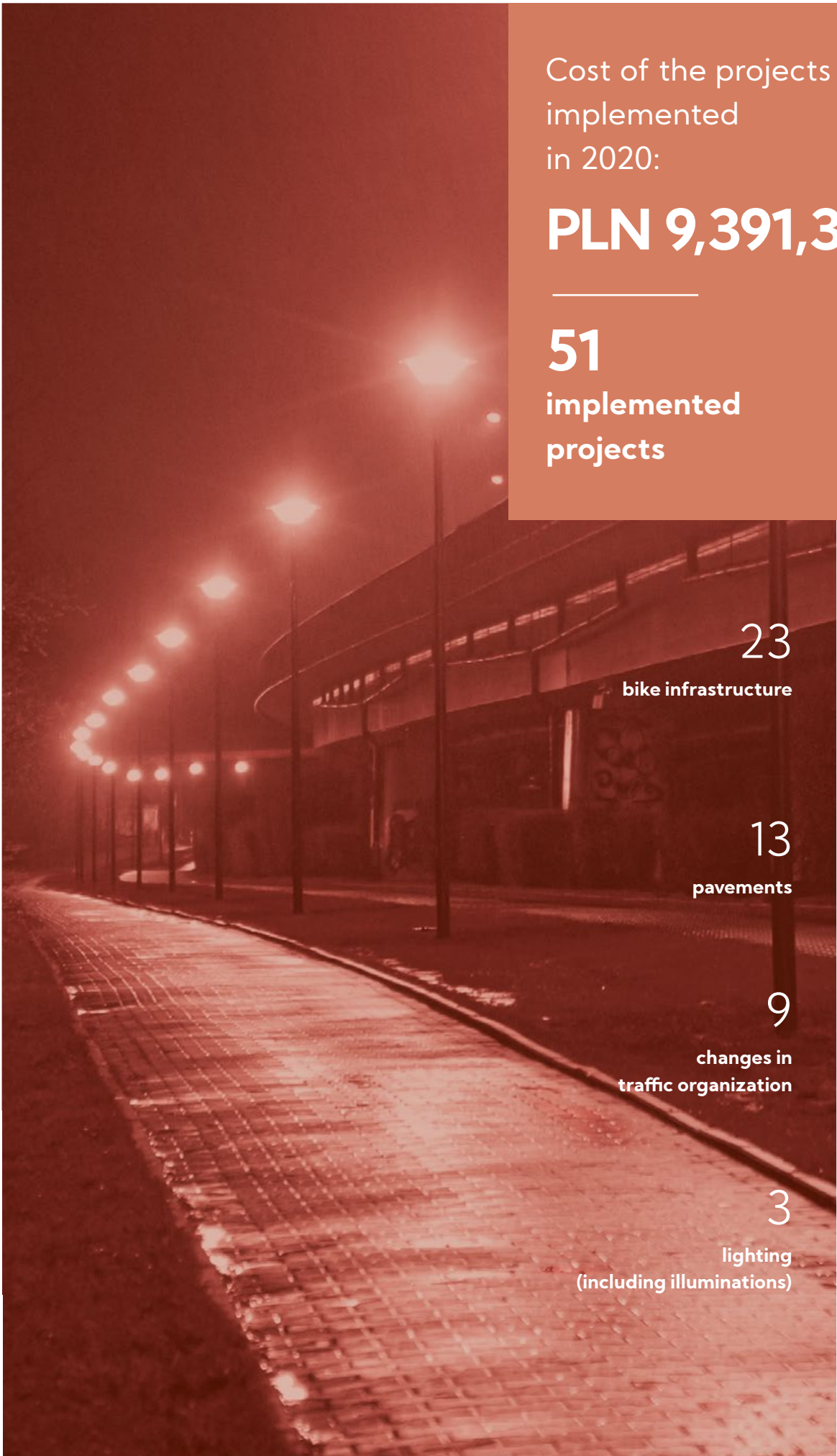
In 2020, ZDM completed 51 projects chosen by citizens under the civic budget. Some of them are overdue projects that could not be completed in previous years. We still have over 90 projects to implement, chosen by citizens so far. They include construction or renovation of pavements as well as new bike routes.



Cost of the projects implemented in 2020:

PLN 9,391,366

51
implemented projects



23
bike infrastructure



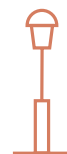
13
pavements



9
changes in traffic organization



3
lighting
(including illuminations)



Efficient handling of notifications from citizens

This is the seventh year the 19115 Warsaw City Contact Center makes it easier for citizens to report failures or ideas. In 2020, we shortened the time of handling notifications once again. On average, we handled 29,904 notifications we received from 1 January to 31 December within 4 days.

Every day, ZDM received an average of 81 notifications. It was less than in the previous year, but the 7% decline was mainly due to the pandemic and the related lockdown. Like in previous years, the largest number of notifications concerned lighting, traffic lights and the condition of pavement, bike path and roadway surface. Citizens also submitted applications for changing traffic organization, marking out new pavements and pedestrian crossings, erecting parking-restricting posts or repairing roads.

The notifiers often paid attention to improving safety. They called for the installation of traffic lights or the construction of refuge islands for pedestrians and speed bumps. There were also signals about the questionable legality of advertisements or facilities in the right of way. We were also notified about flooded roadways or abandoned car wrecks taking up a parking space or posing a threat.

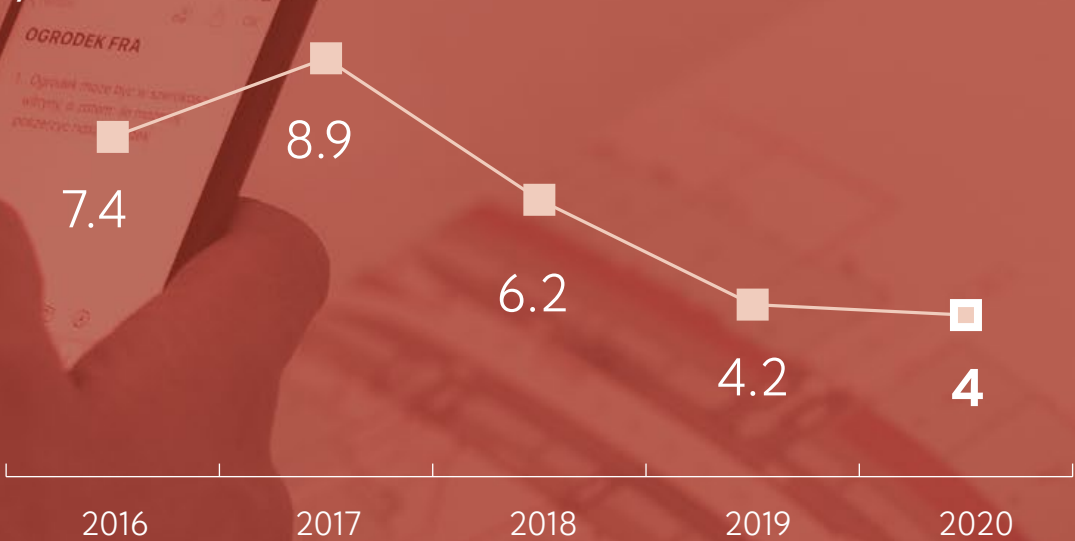
Telephone is still the most popular contact channel with 19115 – over 41.4% of the notifiers chose this method. The second largest number of notifications came from the Warsaw 19115 mobile application, but they were second to telephone applications only by one hundredth of a percentage point (41.3%).

For us, citizens’ notifications are one of the sources of information about failures and defects in the road infrastructure, as a result of which the Breakdown Services can react faster, thus reducing road safety hazards. Every day, round the clock, our employees send maintenance technicians to the places of intervention to repair defects.

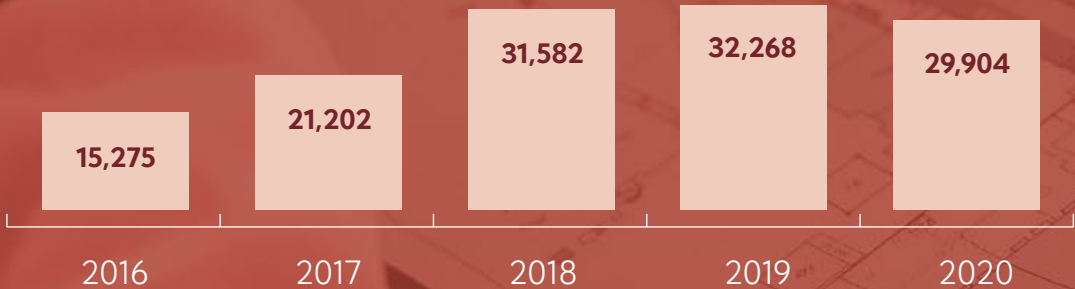
The 19115 Warsaw City Contact Center can be notified not only via the application and by phone but also via the portal warszawa19115.pl, e-mail address kontakt@um.warszawa.pl or chat warszawa19115.pl/web/portal/chat. The city service is available 24 hours a day, seven days a week.



Average time of handling notifications at ZDM (in days):



Number of notifications to ZDM



Districts with the highest number of notifications in 2020

Mokotów	– 4,482
Śródmieście	– 3,302
Praga-Południe	– 2,909
Wola	– 2,362
Białołęka	– 2,052

Districts with the lowest number of notifications in 2020

Wesoła	– 381
Rembertów	– 521
Ursus	– 641
Wilanów	– 645
Żoliborz	– 920

ZDM behind the scenes

ZDM is not only the equipment needed for road measurements and works. ZDM is primarily people who perform thousands of tasks a year – some design, write, calculate, measure or analyse in the office, others check, patrol or repair in the field. We have prepared a photo coverage so that you can see what our work looks like behind the scenes.



When you wait for the construction season to begin



Nice to see you





PUBLIC
ROADS
AUTHORITY

Annual report 2020

Content: **Public Roads Authority, Department of Communication**

Photography: **Mirosław Kaźmierczak / Public Roads Authority**

Graphic design: **Natalia Mikołajczuk**



www.zdm.waw.pl



www.facebook.com/ZDM.Warszawa



twitter.com/ZDM_Warszawa



www.instagram.com/zdm_warszawa/



www.youtube.com/user/zdmwarszawa

Public Roads Authority

ul. Chmielna 120

00-801 Warsaw

phone: 22 55 89 000

fax 22 620 06 08

