



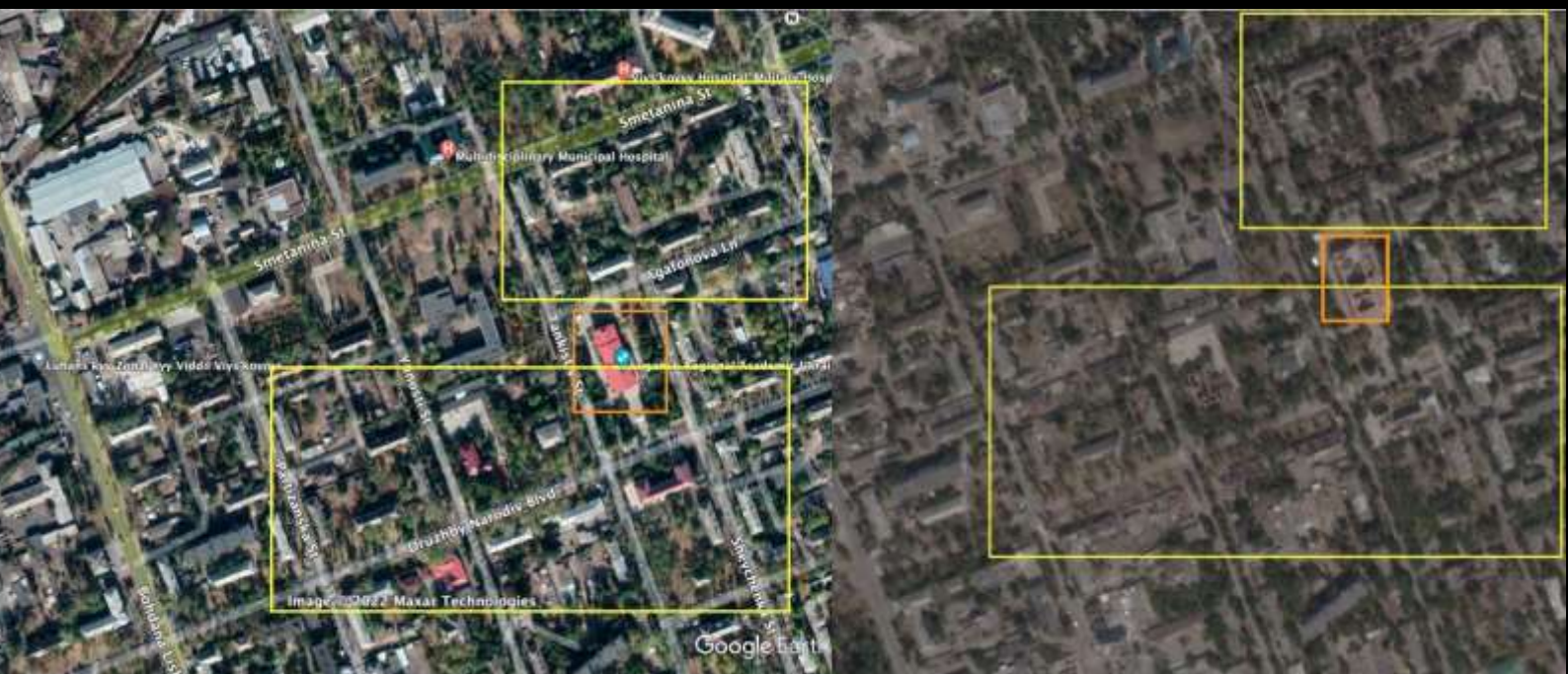
Centre for
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Resilience

Targeting Severodonetsk

The relentless attacks on civilian infrastructure through six case studies

By Eman El-Sherbiny

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The Centre for Information Resilience's Eyes on Russia (EoR) is an open-source investigations project to map, document and verify significant incidents during the conflict in Ukraine.

Our aim is to provide reliable information on the conflict through verified open-source evidence. The lead resource of the Eyes on Russia project is the [Russia-Ukraine Monitor Map](#).

This investigation is a result of that work. The verification seen in this report will be logged in a central database where the material is archived for future use by researchers, reporters as well as justice and accountability bodies.

PLEASE NOTE:

This report contains descriptions of graphic imagery / violence which some readers may find distressing. Additionally, where graphic footage has been verified by EoR investigators it is linked in the footnotes with the explicit warning of "graphic footage."

1. Executive Summary

The city of Severodonetsk, located in Ukraine's industrial heartland, has faced a brutal and systematic attack on its civilian infrastructure. The Centre for Information Resilience's (CIR) Eyes on Russia team have analysed and verified footage and imagery from social media, local and international news media, showing the onslaught of the city.

This investigation delves into the continued bombardment of Severodonetsk from the start of the conflict until its occupation by Russian forces on 24 June 2022. During this period, according to local sources, 90% of the civilian infrastructure in the city was destroyed by airstrikes¹ and only 10,000 people remained in the city.² This includes residential buildings, commercial areas, industrial sites, religious buildings, medical centres, and the remaining bridge out of the city. The targeting of civilian infrastructure is breach of international law,³ and could constitute a war crime.

Using open-source investigative techniques, CIR investigators have provided six case-studies to show the destruction of a number of these sites. This investigation also revealed evidence of the expansion of a local cemetery, demonstrating the human toll of these attacks on the city.

¹ Andrew Hilliar (31 May 2022). Available at: <https://www.france24.com/en/europe/20220531-live-zelensky-says-situation-in-donbas-remains-extremely-difficult>

² Illia Ponomarenko (30 June 2022). Available at: <https://kyivindependent.com/national/as-ukraine-withdraws-from-sieverodonetsk-battle-of-donbas-enters-next-phase>

³ ICRC IHL Database, Available at: https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_rul_rule7_sectionc

2. Introduction and Context

After the Russians seized Mariupol, in Donetsk Oblast, an attack on Severodonetsk (Северодонецьк) in Luhansk Oblast seemed likely. Having served as one of the last strongholds in Luhansk Oblast, Severodonetsk was a battlefield until its fall to Russian troops on 24 June.⁴

In late March, Governor of the Luhansk Region, Serhiy Gaiday, stated that 90% of the city's infrastructure had been destroyed.⁵ The city of Severodonetsk was under Russian fire from 24 February until the city's fall to the Russian forces on 24 June. CIR investigators analysed and verified multitudes of user-generated footage, as well as local and international media reports. They showed the ruinous aftermath of indiscriminate shelling on the city and its surrounding towns and settlements. Moreover, this evidence reveals the systematic attacks on civilian infrastructure.

Severodonetsk's strategic importance lies in being the second most-populated city in the Luhansk Oblast, with 101,000 residents according to the 2019 census. The city's proximity to the neighbouring city of Lysychans'k made it a likely target: having control of Severodonetsk would improve the likelihood that the Russian forces could also take control of Lysychans'k.

As predicted, after the fall of both cities to Russian forces, Luhansk Oblast fell entirely under Russia's control. Along with Donetsk Oblast, the two regions make up the Donbas, a rich industrial hub with coal reserves across Ukraine. Through the Donbas, Russia gets access to trade routes in the Black Sea and through Crimea's seaports.

⁴ Federica Marsi and Usaid Siddiqui (25 June 2022). Available at: <https://www.aljazeera.com/news/2022/6/25/ukraine-russia-war-missiles-hit-yavoriv-military-base-liveblog>

⁵ Andrew Hilliar (31 May 2022). Available at: <https://www.france24.com/en/europe/20220531-live-zelensky-says-situation-in-donbas-remains-extremely-difficult>



Figure 1: Severodonetsk and Lysychans'k in relation to Kyiv and Russia.

This report will provide an overview of the destruction to the city's civilian infrastructure within this timeframe. We analyse six case studies which demonstrate the destruction the invasion has inflicted. For example, it will outline the impact of shelling on: a busy commercial street, Hvardiyskyi Avenue (March); the 'Tricky Market' (March); a residential road, Kurchatova Street (April); the Azot Chemical Plant (May); and the final bridge into the city, the P66 Bridge (May-June).

The report will also provide evidence of the impact these airstrikes have had by uncovering and verifying evidence of the expansion of the Lisna Dacha Cemetery (May-July). These examples are by no means exhaustive of the damage caused to the city, however they demonstrate the indiscriminate, and often targeted nature of attacks by Russian forces on the civic life within the city.

3. Overview of the onslaught on Severodonetsk

Within the first month of the Russian invasion, the reported damage to civilian infrastructure in Severodonetsk was extensive. During this time, the commercial centre, residential housing and a cathedral had been hit by shells.

The following map indicates the location of verified shelling on residential areas, a religious site and two commercial areas, which were hit between the 24 February and the 24 March.

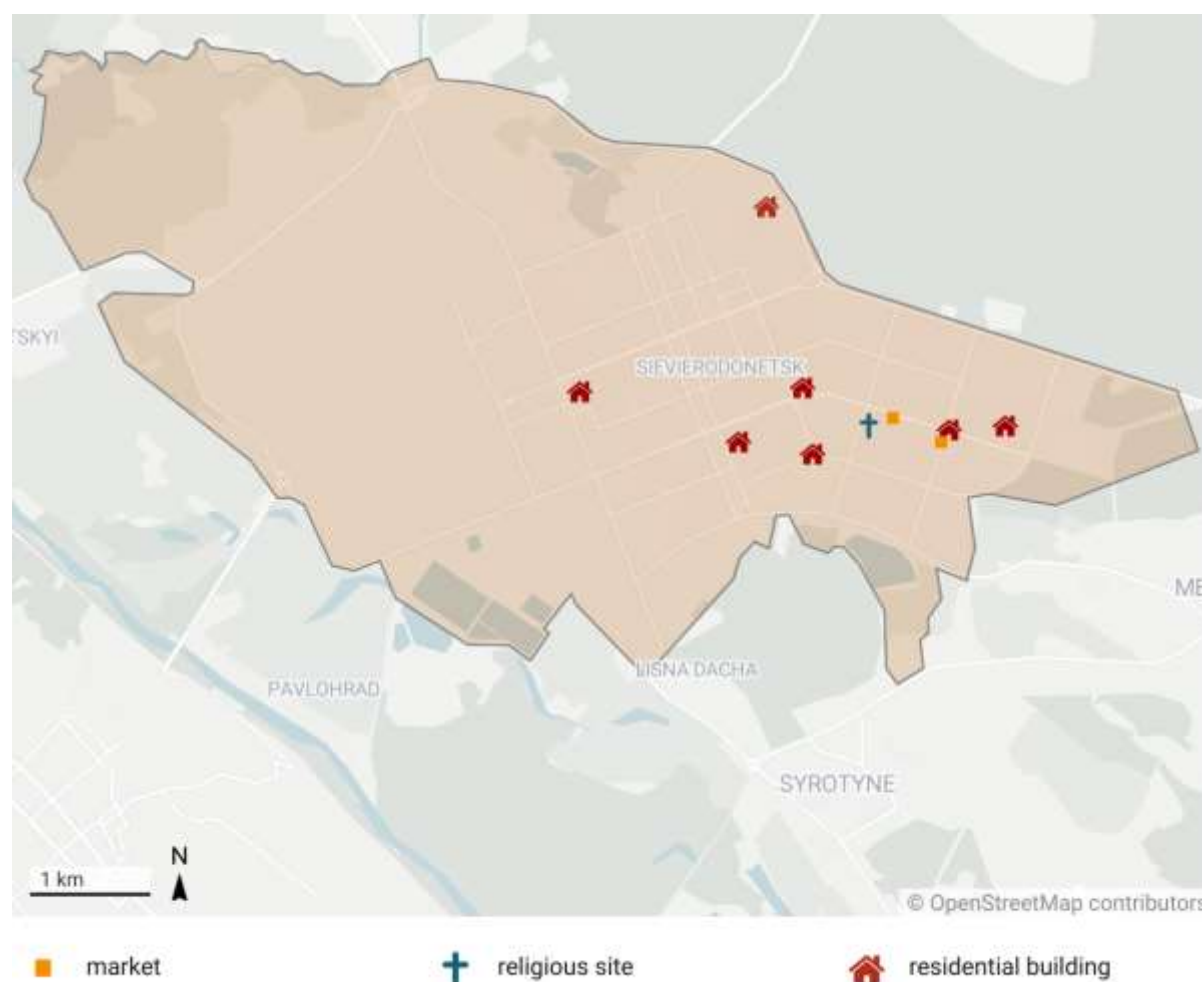


Figure 2: A map of verified damage to civilian infrastructure one month into the Russian invasion (24 February - 24 March).

Reports indicate that the indiscriminate shelling of civilian infrastructure in Severodonetsk continued throughout March with devastating results. The CIR team analysed and geolocate visual content showing the aftermath of shelling in Severodonetsk between the beginning of April and 18 June, days before the city's fall to Russia.

Similar to the damage in March, residential and urban areas were largely hit; however, administrative buildings, a medical facility and industrial plants were also targeted. The locations of these attacks are shown in the Figure below.

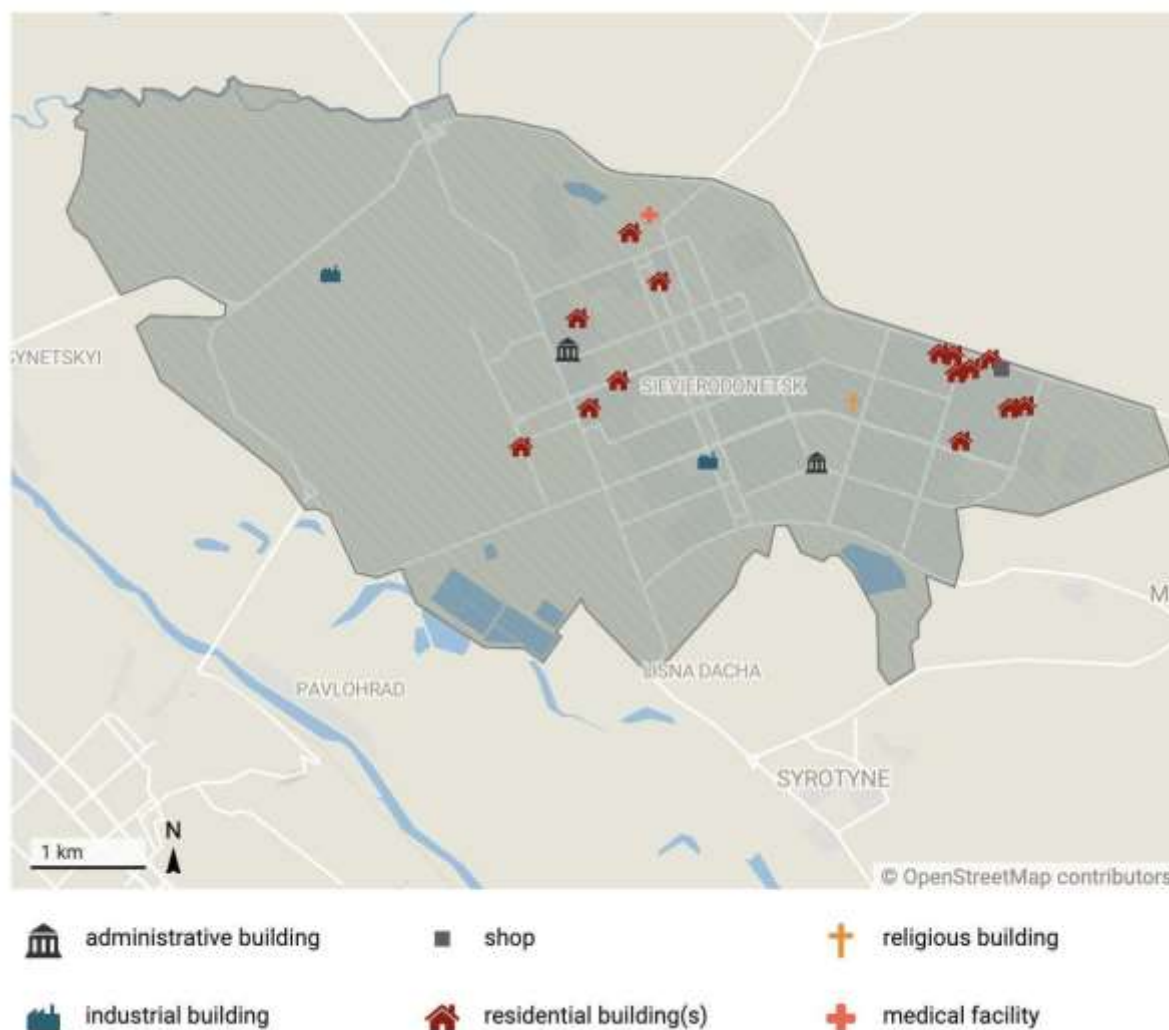


Figure 3: A map of the verified damage to civilian and administrative infrastructure which Eyes on Russia documented from April till 18 June 2022.

During this time period, the daily lives of the residents in the city was greatly affected and attempts to evacuate civilians were hampered by the continued shelling. In mid-March, Governor Gaidai told Reuters⁶ that evacuation efforts from Severodonetsk had proven difficult due to the frequent shelling.

⁶ Natalia Zinets (18 March 2022). Available at: <https://www.reuters.com/world/europe/russian-bombardment-preventing-evacuations-ukraines-luhansk-region-governor-2022-03-18/>

Reports began to circulate that essential services like water⁷ and electricity were frequently cut,⁸ or unavailable entirely. With few options to leave the city, the increased threats of shelling, and lack of access to basic services, it is clear that the lives of the residents continued to get more difficult throughout June.

By comparing satellite imagery of the city of Severodonetsk from 17 July 2022 and October 2020, it is possible to determine that there was extensive damage across the city by Russian shelling. The figure below demonstrates the widespread nature of the destruction.

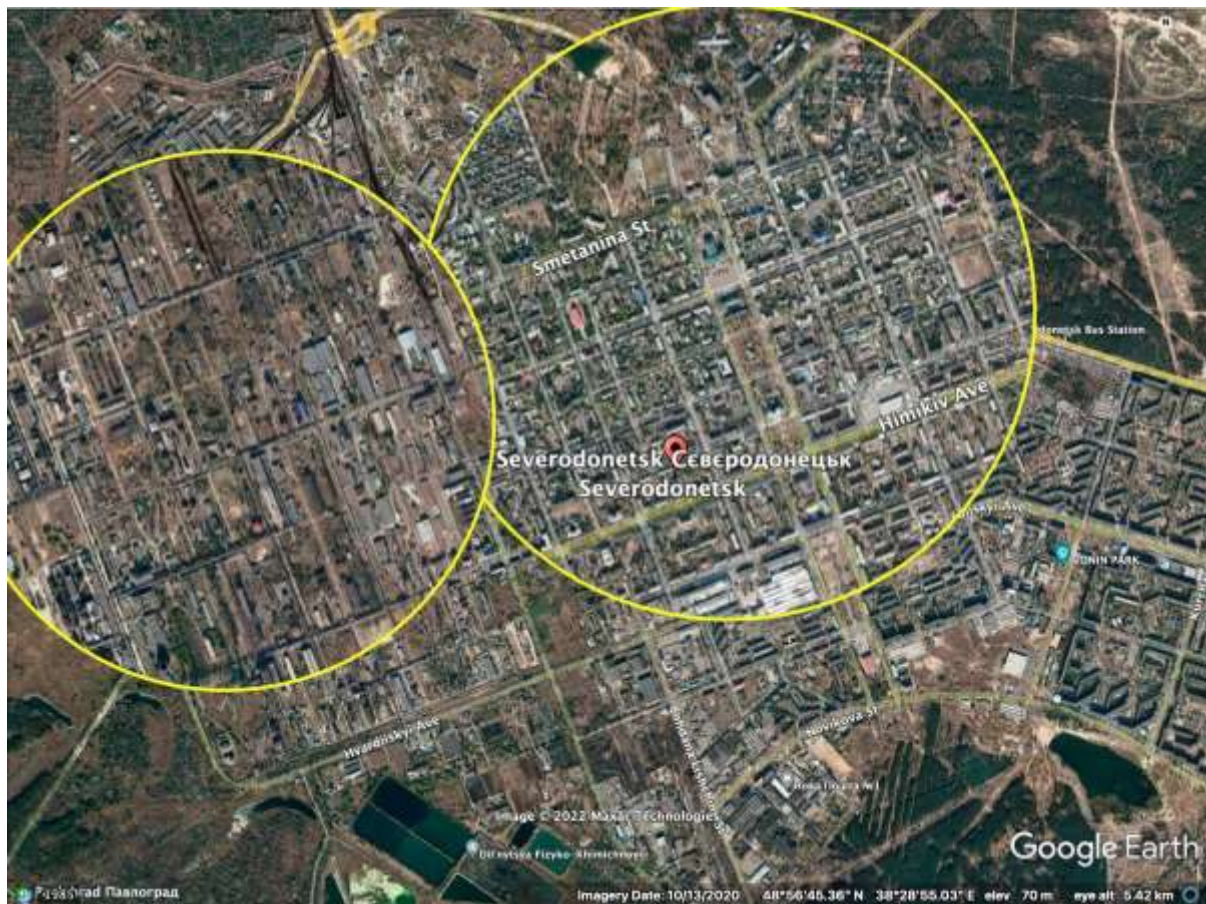


Figure 4: Satellite imagery from October 2020 showing the infrastructure of Severodonetsk before the Russian invasion.

⁷ Reis Thebault and Bryan Pitch (1 June). Available at: <https://www.washingtonpost.com/world/2022/05/31/severodonetsk-luhansk-donbas-ukraine-russia-war/>

⁸ Davit Kachkachishvili (17 June). Available at: <https://www.aa.com.tr/en/russia-ukraine-war/no-gas-water-or-electricity-but-life-moves-on-in-ukrainian-shelters/2616401>



Figure 5: Planet imagery of Severodonetsk from 17 July 2022, revealing the impact on at least 70% of the city.

An example of widespread destruction can be seen around the Lugansk Regional Academic Ukrainian Music and Drama Theatre. Satellite imagery indicated large-scale destruction of apartment buildings in this area, as well as the partial destruction of the Music and Drama Theatre visible in figure 6.

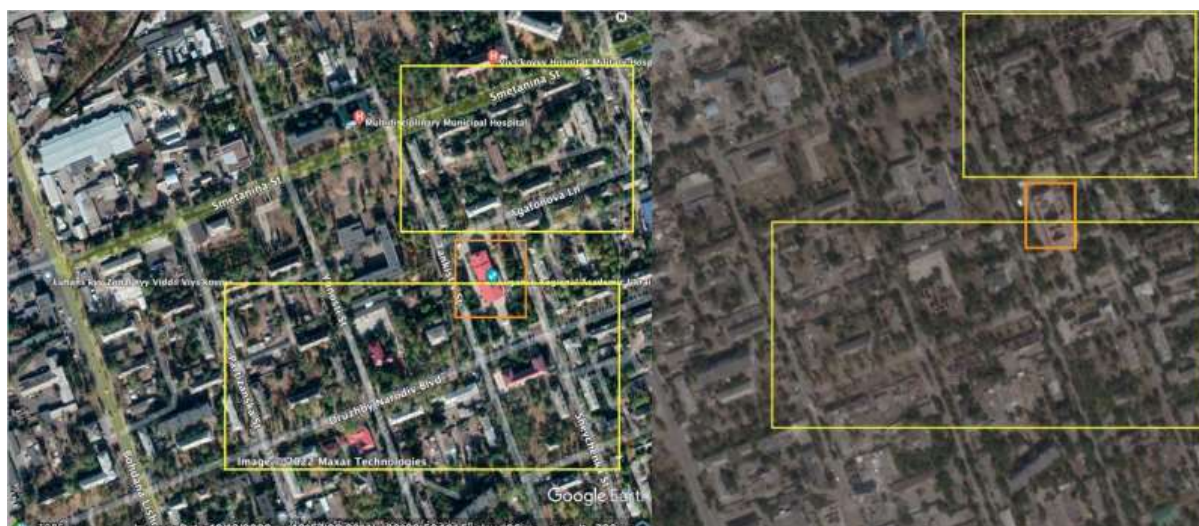


Figure 6: Intact residential and educational buildings seen on satellite imagery pre invasion [left] compared to Planet imagery from 17 July showing widespread damage to residential and educational buildings [48.952382, 38.483378] [right].

The shelling on the city of Severodonetsk has clearly had a devastating impact on civilian infrastructure. Not only was there significant physical damage to buildings, industry and sites of commerce, but essential services were heavily disrupted. On 5 March,⁹ the first reports that water and electricity supplies had been disrupted began to emerge. The impact of a lack of services on the daily lives of those trapped in the city has been immense. There have been reports of families drinking water from puddles and remaining businesses grinding to a halt without electricity.

The following six case studies will profile the damage to certain sites. All six were identified and verified using open-source investigation techniques. The attacks have undoubtedly killed a number of civilians, as shown by the expansion of the Lisna Dacha Cemetery.

However it should be noted that these examples do not exhaustively catalogue the damage to the city. The case-studies provide a small snapshot to the damage of cultural, commercial, industrial and residential areas within the city due to the Russian invasion.

⁹ Ukrinform (5 May). Available at: <https://www.ukrinform.net/rubric-ato/3420790-russian-shelling-turns-towns-of-luhansk-region-into-ruins-green-corridor-being-prepared.html>

4. The Six Case-Studies

Example 1: Hvardiiskyi Avenue (March)

CIR collected user-generated footage from the area, which was then analysed and verified. The footage revealed that in the first month of the invasion, and within a small proximity of the Hvardiiskyi Avenue, a total of seven residential buildings and a cathedral were destroyed.

As the footage analysed by CIR investigators was taken between 24 February and 18 June by different individuals, it was possible to assess the extent of the damage to the city's infrastructure at various points in time and in different locations. During this timeframe, the residential area, a commercial avenue and a cathedral faced significant shelling.

A video news report by UATV¹⁰ dated 16 March, shows a once-bustling avenue now turned to rubble. The correspondent walks through the remains of a large stretch of Hvardiiskyi Avenue, a popular spot and previously home to a strip of supermarkets, cafes, pharmacies and one sizeable flea market. This 2:53 minute video shows the avenue after it was apparently shelled. One of the frames captured the Foxtrot Shopping Centre, a popular place for the city's residents to meet to socialise and relax, located on Hvardiiskyi Avenue.



Figure 7: A frame taken from the UATV news report, showing the Foxtrot Shopping Centre after the shelling [48.941907, 38.518283] [left] compared to a Google Maps Street view of the Foxtrot Shopping Centre from Sep 2021 [right].

According to UATV, the Foxtrot shopping centre is one of the city's favourite hangouts with multiple restaurants and cafes, just around from the city's biggest market referred to as Tricky

¹⁰ UATV English (16 March). Available at: <https://www.youtube.com/watch?v=ozMPNcdhiAo>

Market. At the time of writing, it was not possible to verify the number of civilian casualties caused by the airstrikes on the commercial centre. These airstrikes caused significant damage to the heart of the city. Areas which once were full of life and provided a sense of community have been left unusable.

Example 2: Tricky Market (March)

Another frame from the UATV news report shows the famous flea market known as ‘Tricky market’. Considerable damage can be seen to the structure and the shop fronts. The market is one of Severodonetsk’s biggest food markets that double as flea markets. The market’s older imagery on Google Maps shows multiple stalls of fresh produce and household items.

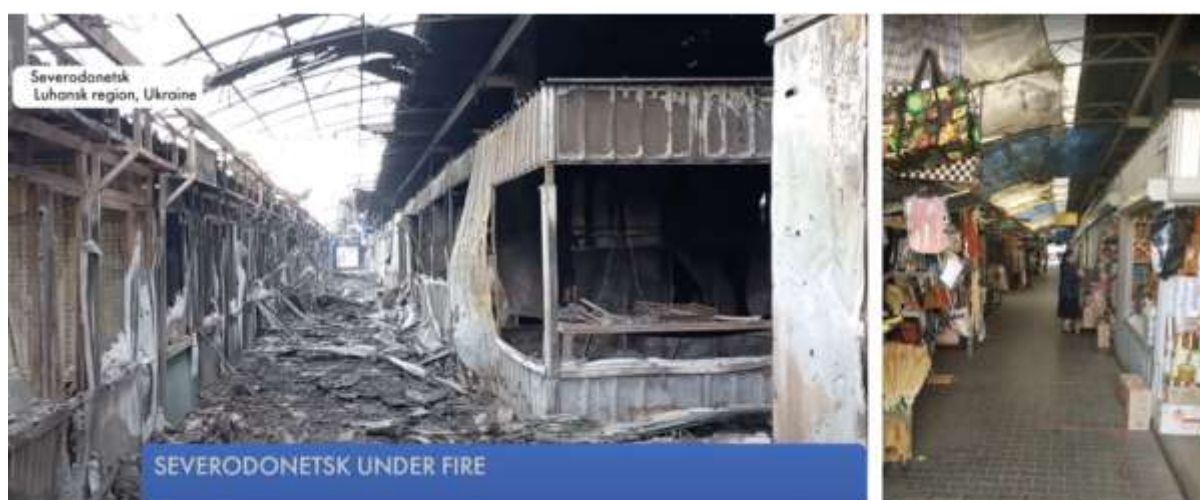


Figure 8: A frame taken from the UATV news report, showing the destroyed flea market [left] compared to a Google Maps image of the flea market taken in 2020 [right] [48.940718, 38.523753].

The airstrike that hit the ‘Tricky Market’ destroyed the market’s canopy and most of the market stalls which had previously sold a variety of food produce, household and clothing items amongst other things. The market also was renowned for its affordable shopping, second-hand stalls and flea shops.

The market is another busy destination just across from a mall on Kurchatova Street and within a walking distance from the Foxtrot Shopping Centre. Commercial centres are sites where people are drawn together, thus, the attacks on Hvardiiskyi Avenue and on the Tricky Market can be viewed as attacks on civic life, cultural identity and community spirit.

Example 3: Kurchatova Street (April)

Attacks on residential infrastructure continued to occur in April. One video posted on Twitter by a Ukrainian-speaking Twitter account shows the extent of damage some residential and commercial buildings had sustained. The footage dated 9 April¹¹ showed Kurchatova Street, in the northeast of Severodonetsk after it was shelled.

The video, which was verified and analysed by CIR investigators shows that a number of apartment blocks were hit by shells, along with shops and power lines. As well as attacks on shops and residential areas, according to a Severodonetsk local, gas and electricity services were cut off from 1 March.



Figure 9: An image from Google Maps showing the destroyed building before the conflict began [left], compared to a frame of the hit apartment building on Kurchatova Street seen in the April video [right]¹² [48.946750, 38.526771].

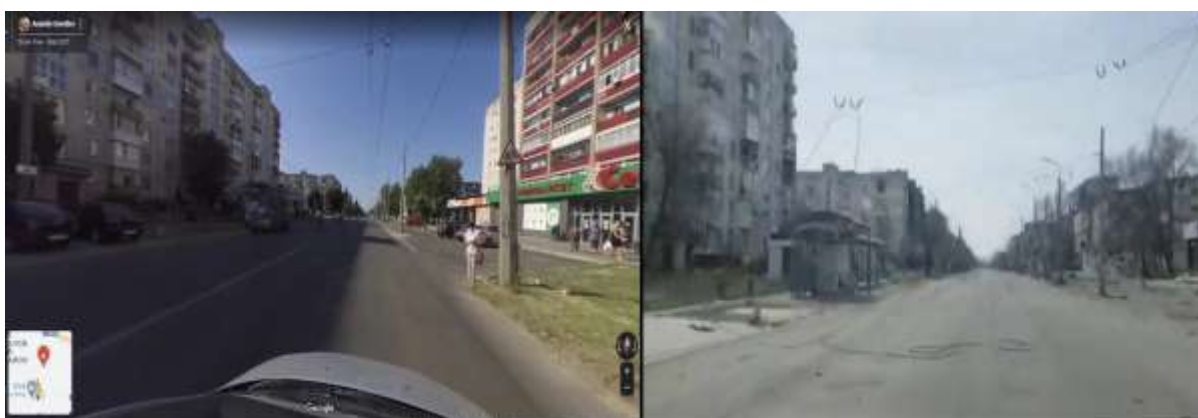


Figure 10: An image of Kurchatova Street from Google Maps taken before the conflict [left] compared to a view of Kurchatova Street from the aftermath video posted on Twitter on 9 April [right].¹³

¹¹ Luckyman_1108 (9 April). Available at: https://twitter.com/Luckyman_1108/status/1512852669613977607

¹² Luckyman_1108 (9 April). Available at: https://twitter.com/Luckyman_1108/status/1512852669613977607

¹³ Luckyman_1108 (9 April). Available at: https://twitter.com/Luckyman_1108/status/1512852669613977607

In the verified video, it is possible to see the damage to the exterior of the Tricky Market following the shelling (see Figure 11).



Figure 11: Extensive damage to the Tricky Market [top], compared to google street view imagery, prior to the markets destruction [bottom].

The indiscriminate nature of these attacks on commercial centres and residential areas have placed not only livelihoods at risk, but also placed lives in significant danger. The footage analysed above displays one aspect of the damage inflicted on one residential street that cuts across the southeast of Severodonetsk.

Many other streets have faced similar fates. Residential buildings and power lines have been affected in busy areas of the city. However, civilian infrastructure is protected under International Law. The targeting of civilian infrastructure breaches the Geneva Convention and

its Additional Protocols, as well as the Rome Statute.¹⁴ These examples, and others not covered in this report, should be investigated further by lawyers to determine the legality of the onslaught on the city.

Example 4: Azot Chemical Plant (May)

One of the industrial areas that was targeted was the Azot chemical plant in west Severodonetsk. Before the war, some 7,000 people were reported to have worked at the plant. The chemical plant is Severodonetsk's biggest plant producing ammonia and fertilisers.¹⁵

On 31 May, footage¹⁶ of an explosion at the site was released by a Telegram channel that routinely posts videos of events taking place in Ukraine. It showed smoke billowing and by examining imagery around that date, it is apparent that four specific tankers reportedly filled with nitrates were hit, posing serious health hazards to people in the immediate vicinity of the plant.

When the news broke about the strike it also became apparent that there were people holed up inside the plant, taking refuge from Russian artillery strikes. It was speculated that between 300-550 (the majority of whom were civilians) people were inside.

While news sources have speculated that a number of these individuals were killed during the shelling, at the time of writing there was no verified information on the casualties. According to Luhansk Region Governor Sergei Gaidai, evacuating the civilians from the plant would have been near-impossible due to the incessant shelling.¹⁷

¹⁴ ICRC (n.d.) IHL Database, Available at: https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_rul_rule7_sectionc

¹⁵ Australian Broadcasting Corporation (16 June). Available at: <https://www.abc.net.au/news/2022-06-16/ukraine-chemical-plant-siege-what-we-know/101156928>

¹⁶ Романов Лайт (31 May). Available at: https://t.me/romanov_92/17151

¹⁷ Daniil Sotnikov (17 June). Available at: <https://www.dw.com/ru/vlasti-luganska-zayavili-o-nevozmozhnosti-evakuacii-soten-mirnyh-zhitelej-s-zavoda-azot/a-62163850>



Figure 12: A still of the billowing smoke after four nitrate tankers were targeted.



Figure 13: Planet imagery from July 17 showing the damage to Azot Chemical Plant [left] compared to older satellite imagery dated October, 2020, showing the four tankers intact [right].

Drone footage¹⁸ from 17 June was found on a Telegram channel spanning across the Azot chemical plant. It shows the scale of the destruction that the plant had sustained.



Figure 14: A still from the drone footage of the Azot plant on 17 June, found on Telegram [left], and a satellite image of one side of the plant, used to verify the location of the drone footage [right].

¹⁸Военная хроника (17 June). Available at: <https://t.me/milchronicles/748>

This attack on the Azot Industrial plant represents just one attack on industrial sites within the wider oblast. Not only is this an attack on the industrial heartlands of the country, but on individual people, as this places people's livelihoods at risk. Hundreds of civilians, including children, were taking refuge within the plant. Their lives were put at risk either by the impact of the shelling or the destruction of multiple tanks containing nitrates.

On 25 June, following the fall of the city to the Russian forces, Severodonetsk's mayor, Striusk said that an evacuation process had started. "These people have spent almost three months of their lives in basements, shelters. That's tough emotionally and physically," he added.¹⁹ While the news that these people were safely evacuated came as a relief, they exited these shelters to find their city under occupation. The CIR team will continue to monitor attacks on industrial sites.

Example 5: The P66 Bridge (May-June) - Severodonetsk's last access route destroyed

Most bridges around and into Severodonetsk sustained damage during the first few months of the invasion, hampering any movements in or out of the city. The last remaining intact bridge - the P66 Bridge - which served as the last access route into the oblast for supplies, including humanitarian assistance, was destroyed between 25 May and 19 June. The bridge was effectively the latest intact route in or out of Severodonetsk within a 17 kilometre radius, cutting Severodonetsk off from the rest of the oblast.

A video that appeared on Telegram on 28 June showing the bridge at the point of impact which was geolocated to the P66 Bridge²⁰. The CIR team analysed satellite imagery taken between 25 May and 19 June and deduced the bridge [48.946777, 38.407164] had sustained multiple attacks between those dates.

¹⁹ Federica Marsi and Usaid Siddiqui (25 June 2022). Available at: <https://www.aljazeera.com/news/2022/6/25/ukraine-russia-war-missiles-hit-yavoriv-military-base-liveblog>

²⁰ Kotsnews (28 June 2022). Available at: <https://t.me/sashakots/34031>



Figure 15: A still from the video showing the P66 Bridge getting hit [left]. And satellite imagery used to geolocate and verify the destruction of the bridge [right] [48.946777, 38.407164].



Figure 16: Planet imagery of the P66 Bridge from 25 May, showing the bridge intact.



Figure 17: Planet imagery of the P66 Bridge from 19 June, showing damage to the bridge.

The P66 Bridge was the last remaining intact bridge out of the city, and it connected the city to Lysychans'k. Destroying this bridge cut the city off from its surroundings. The destruction of the bridge was not only a strategic blow by Russian forces which helped to secure their victory over Severodonetsk but a blow for civilians also, as it restricted the movement of both people and aid in and out of the city. As the fighting heightened and the Ukrainian forces retreated, Severodonetsk fell to the Russian forces on 24 June.

Example 6: The Lisna Dacha Cemetery

The CIR team identified and verified a video,²¹ dated 9 August, which shows the Lisna Dacha cemetery, in the southernmost part of Severodonetsk [48.924763, 38.492557]. The camera's view spans across many new headstones. The dates on the headstones are visible, indicating that the individuals buried in this cemetery died between 23 May and 9 July.



Figure 18: A still from the video showing the latest date of death at the Lisna Dacha cemetery, Severodonetsk.



Figure 19: The Khresto-Vozdvyzhens'kyy Khram seen in the video matches satellite imagery from the Shrine.

²¹ Северодонецк сейчас (9 August 2022). Available at: <https://www.youtube.com/watch?v=pyFmfIEzUYU>

As more footage²² of the cemetery emerged on 3 September, additional new headstones can be seen as the camera spans across another part of the cemetery. Based on analysis by CIR investigators, 350 headstones can be seen in this video; although, unlike the previous video, it is not possible to read the dates inscribed on the headstones. In one frame, it is possible to see three empty graves just south of the shrine. Images uploaded by the LA Times shows clearer writing on the grave markers, indicating at least one of them as 7 April 2022.



Figure 20: One side of the cemetery west of the shrine as seen in the video footage from 3 September.



Figure 21: Another side of the cemetery as seen in the video footage from 3 September.

²² Strana Info (3 September 2022). Available at: <https://www.youtube.com/watch?v=KYt4dxvFOTE>



Figure 22: Three dug up and seemingly empty graves in the cemetery, as seen in the video footage from 3 September.

Through a comparison of satellite imagery from the 17 July and older satellite imagery, it was possible to view the expansion of the cemetery (orange boxes in figure 29). Additionally, it appears that land has been cleared (yellow box in figure 29).

CIR investigators will continue to monitor land clearance in this area and user-generated content from the site to establish whether this clearance is to allow further expansion of the cemetery.



Figure 23: Older imagery of the cemetery [left] compared to the expansion of the cemetery since the start of the invasion [orange, right].

Although this example hasn't provided evidence of an attack on civilian infrastructure like the other examples presented within this report, the expansion of the Lisna Dacha cemetery indicates the significant human toll of the Russian invasion on the city of Severodonetsk.

In late May, Ukrainian officials said that Russia's intense shelling made the task of assessing casualties and damages near impossible. Severodonetsk's mayor, Oleksander Striusk also stated that the remaining population risked coming under shelling when they went looking for water sources, and he estimated that 1,500 civilians had died due to Russian strikes or lack of medicine.²³

²³ Lorenzo Tondo (29 May 2022). Available at: <https://www.theguardian.com/world/2022/may/29/sieverodonetsk-bombing-so-intense-casualties-cant-be-assessed-officials-say>

5. Conclusion

As the city of Severodonetsk fell to Russian forces on the 24 June, it brought a moment of respite from the shelling. Over the previous five months, the city's civilian infrastructure had come under a relentless attack. Residential buildings, commercial centres, cultural sites, medical facilities, industrial plants, religious buildings, and the remaining bridge into the city, all came under fire. This investigation has documented six case-studies; however, it should be noted that these examples do not exhaustively catalogue the damage to the city.

In this report, CIR investigators have verified evidence of the onslaught of the city. Through the case-studies CIR has demonstrated the destruction that shelling has caused. An additional case study which reveals the continued expansion of the Lisna Dacha Cemetery indicates the human toll of these attacks. The conflict has brought daily life to a standstill. It has placed lives in danger, interrupted commercial activity, impacted livelihoods, and prevented the residents from engaging in normal day-to-day practices through the restrictions on essential services, including electricity and water.

As the second most populated city in the Luhansk Oblast, and its location in the industrial heathlands of Ukraine, the city of Severodonetsk is of strategic and symbolic importance to Russia. The CIR team will continue to monitor developments in the city, the role of occupation forces and the impact of the conflict on the daily lives of its remaining inhabitants.



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