

# **Analysis of Civic Amenity Sites Management System in the City of Brno**

The main subject of our project is an analysis of waste management system in the city of Brno. We have tried to offer general view of the system and its functioning and suggest possible improvements. The basic idea of the whole project was to find possible ways of future development by using a comparison of the civic amenity sites' systems.

The work is divided into three key parts. The first one is an analysis of current situation in Brno. It shows problems of civic amenity sites (CA sites) in Brno and outlines the situation in other cities in the Czech Republic and abroad. The second part consists of suggestions of improvements and the third part offers new solutions that might be implemented into the system.

We worked out several analyses in order to obtain better insight in the waste management system in Brno. We visited every CA site to find out their frequency of use, facilities, security and accessibility by car or public transport system etc. The whole system was then analyzed using SWOT analysis and the parameter of reaching distance to the incinerator. We also examined waste management system in other cities to get a better overview.

## **Comparison with the abroad cities**

We used two categories of cities for our comparison – cities in Slovakia with over 50 000 inhabitants and cities in European Union comparable to Brno (300 000 – 500 000 inhabitants). The data was collected by questionnaires and searching the official websites of cities.

We analyzed the amount of civic amenity sites in those cities and searched for projects of secondary use of disposed items. Also the comparison of the accessibility of data searched for on the official websites was carried out.

The results and suggestions are as follows:

Brno has more civic amenity sites than any other city in the survey. The ratio is about 10 400 inhabitants/CA site, while in Slovak cities it is on average about 50 000 inhabitants/CA site, meaning there is about 5 times more CA sites in Brno than in an average Slovakian city. The cities in European Union comparable to Brno also showed interesting results. Some of them have only 1 CA site, maximum was 18, while in Brno there are 39. The average ratio was about 150 000 inhabitants/CA site. These results support our thought that in Brno there are more CA sites than is needed.

The projects for the reuse of items were not found in any Slovak city (except regular charities). In other cities we found some very interesting examples of dealing with this topic. Online auctions of unwanted items, often offered for free, are a very common thing. Their main problem is that not many people know about them. In the cities of Mannheim, Bonn and Kingston upon Hull they support these projects by placing the information at official city website. Other type of item reuse project is collection of all unwanted items at one place and later choosing by those who need those items. Excellent examples of such projects can be found in Bologna and Haag. We suggest that the city of Brno should start or support a project like this, in order to reduce the amount of waste disposed of in the civic amenity sites.

Last but not least, we analyzed the accessibility of information. In all the cities in the Great Britain there was a link for such information at the home page of official website, which we found really practical. We suggest that the city of Brno would do the same and place a link for information about reduction, reuse and recycling of waste and about CA sites at the home page of its official website.

## **Conclusions**

Our analysis is primarily focused on operational and technical aspects of the civic amenity sites system in Brno. Of course, we also took into account other dimensions - social, environmental, ethical etc. We prepared several proposals for changes of the system as an outcome of our analysis. Also we mentioned problems that could be caused by implementation of these changes. Basics for our proposals are clearly reported in SWOT analysis.

As the staff service told us visits by citizen depend mainly on weather and on day time. During the year they are coming in the start of spring, in summer holidays and around Christmas and Easter. During the week they are dependent on work time and they can arrive only after working hours. Usually they come almost after closing hour. The authorities should satisfy residents and they should adapt and integrate opening time.

Many CA sites face various problems e.g. insufficient fence allowing vandalism and thefts, which cause higher running costs. Thieves visit CA sites in night and they took some metal components of electronic waste. Financial losses arise by these robberies and it is counted in thousands of Czech crowns. It could be prevented by better fencing, by installable cameras or by motion sensors.

Another problem is low satisfaction of people with service due to restrictions of disposable waste and fee for disposing of dangerous waste and other 'high cost' kinds of waste. This could be for some people so unacceptable that they sometimes leave their waste right at the gate. The proposed video-monitoring of the CA sites and their neighborhood will allow preventing these cases.

We collected a large amount of data about CA sites which had to be analyzed. The most important detection was the very high number of CA sites in Brno in comparison with other Czech and European cities. From the range of cities that were compared the largest number of CA sites we found in Ostrava (16). Moreover there is a next reduction planned. It is obvious that Brno with its 39 CA sites stands out of the general trend.

This information influenced our further research and we decided to make a list of CA sites suitable for a cancellation. We put on that list CA sites which we found ineffective or unsuitable because of their wrong placement or bad access for transport service or their size. From geographical point of view the situation of duplicity is very often – some of CA sites are placed in two different districts but actually they are too close to each other and serve for the same area. It is clearly possible to see this problem on maps which we created for our project.

Reduction of the amount of CA sites will mean more money for each CA site. It should lead to extending and improving of offered services and protection of CA sites.

Economies of scale are not negligible because the operation of large amount of small a middle size CA sites is always more expensive than the operation of smaller amount of bigger CA sites. We could save a large amount of money just by increasing efficiency of human resources because many of employees will be found redundant in the case of CA sites cancelling.

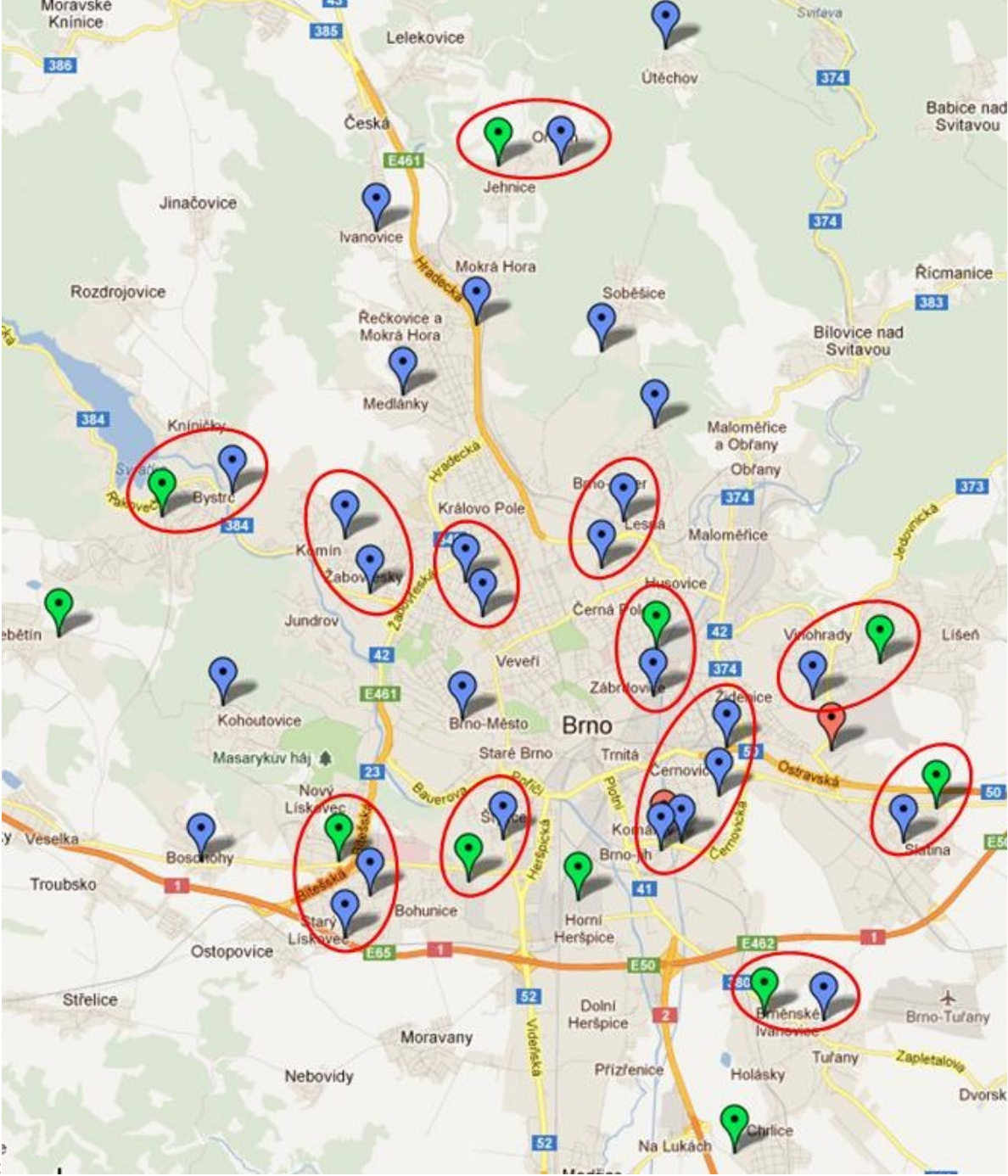
We are aware that citizens can be mistaken and the reduction of CA sites can be understood by them as a limitation of public services, although this is not true as we tried to show in our study. That is why the way how people will be informed about the restructuring is essential.

Due to our own work with information and also due to the comparison with foreign cities we found out that there is a big space for improvements in Brno information system. We recommend putting internet link on a Brno city homepage that will help people to get on some basic information directory about waste management in Brno. Furthermore we think that it is necessary to improve the way how people can search for information about CA sites in GIS system and make it all more user-friendly (e.g. addition of GPS). This may help to improve public awareness about their allocation and, if those information are added to the map, knowledge about types of waste disposable at specific sites.

Next important part of our study is a proposal of project „*Give him a chance*“. The aim of this project is to separate usable furniture or other things usable in household. We suggest creating a charity shop where these usable items could be sold. This idea has an ecological level (prevention of waste), social level (help for low-income groups) and community (money from the project can be used for charity).

In summary we can say that the result of our suggestions should be saving of public money, reduction of waste and better awareness of people leading to a more rational waste management.

**Current situation:**



**After planned reduction:**

