

Study on Maintenance and Management Measures of Municipal Drainage System

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Abstract: With the continuous development of China's modern economy, it has greatly promoted the pace of the process of urbanization. In the construction of urban infrastructure, municipal drainage system occupies the main position, it can clear the city water, beautify the city, and create a comfortable living environment. In order to play the role of the municipal drainage system to the extreme, the relevant departments should put the drainage system's maintenance and management into practice, and find out the problem and solve it in time. Based on the operation of municipal drainage system, this paper discusses the problems encountered in the maintenance and management of drainage system, and puts forward effective solutions to the problems.

Keywords: Municipal drainage system; maintenance and management; measures

Introduction

With the acceleration of urbanization, many heavy industry enterprises are increasing. Every day, a large number of industrial wastewater and domestic wastewater will be generated. The discharge of municipal drainage system can avoid the serious impact of these wastewater on people's life to a certain extent. In this regard, the normal operation of municipal drainage system is an important guarantee to beautify the city and create a comfortable living environment.

1. The concept of drainage system

The drainage system refers to the whole of the flow of water in a special way, such as collection, transportation, water treatment, and discharge. It is the general name of drainage pipes and buildings to remove flood, prevent stains and prevent salt. Field drainage regulation network, drainage ditch, pumping station, drainage and discharge area and drainage sluice are important components of drainage system. The water flow in the drainage area is entered into the field drainage regulation network, and then through the drainage ditch, the drainage sluice flows into the drainage area. As shown in Figure 1, the construction process flow chart of the water supply and drainage system ^[1].

2. Problems encountered in the maintenance and management of municipal drainage system

The municipal drainage system involves a wide range, and the environment is more complex. It brings great difficulties to the maintenance and management work, and makes the municipal drainage system encounter many .

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problems in maintenance and management

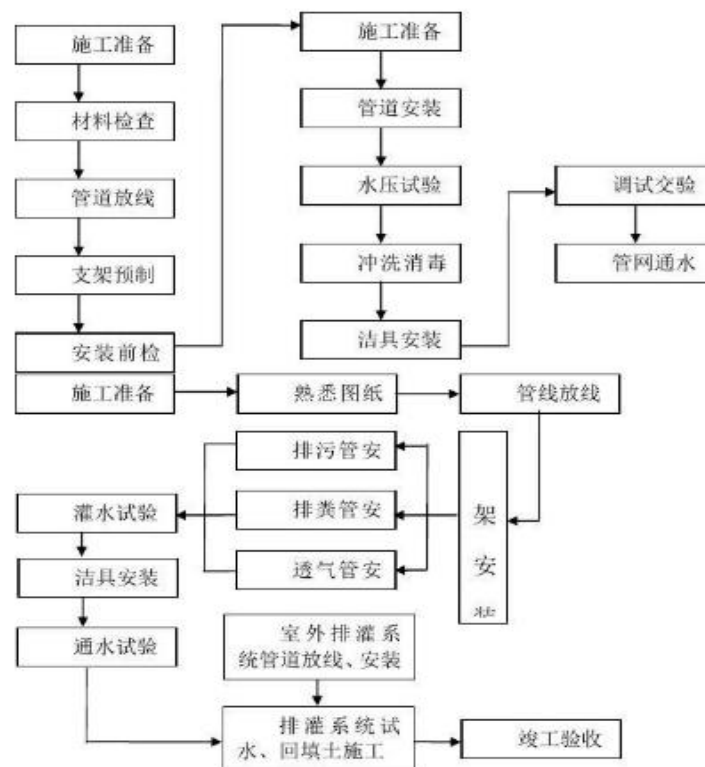


Figure 1; Construction process flow chart of water supply and drainage system.

2.1 Unreasonable design of municipal drainage system

In the old town of the city, the municipal drainage system exists the unreasonable design of the phenomenon, due to the influence of traditional factors, then the government departments in the planning and plan of municipal drainage system does not take into account the future development trend of the city, with the city going forward, city population increases year by year, which leads to the problem of municipal drainage the system appears more and more serious, such as drainage effect is poor, if encountered heavy rain, the city will appear waterlogging, adversely affect people's travel. In addition, in order to improve the drainage effect of municipal drainage system, conform to the trend of the development of the city better, government departments must carry on the optimization and improvement of the drainage system, in the design process, this will obscure the road and bring some impact to people's travel and urban traffic [2].

2.2 Maintenance and management work is not in place

In the municipal drainage system management and maintenance work, its content is more complicated, once the details of the work is not in place, it is prone to problems. By discussing the problems of maintenance and management of municipal drainage system, the results show that this is due to the fact that the management personnel failed to put in place the maintenance and management work. The drainage system will have some problems after a long time and are ignored by the staff. Some drainage pipes are clogged with sundries, and the staff are not cleared in time so that the waste water is not discharged in time, causing urban waterlogging. In addition, for the construction work along the pipeline, no special staff was personally involved in the investigation of the site and communicated with the constructor, so that the phenomenon of destroying the drainage pipe during construction often appeared.

2.3 The manager's own quality is low

The maintenance and management of municipal drainage system need to persist for a long time. Managers should also improve the importance of maintenance and management, enhance their quality, and implement the maintenance

and management of municipal drainage system. However, the results showed that the responsibility of a few management personnel was very poor. It was not easy to find some drainage system problems in the course of testing the drainage system, and the safety problems in the drainage system could not be found immediately. In addition, some managers lack some professional skills and are very inefficient in their usual maintenance and management work. They spend a lot of time looking for the root causes of problems in the drainage system and can not maximize the role of the drainage system.

3. Management and maintenance measures of municipal drainage system

In order to make the municipal drainage system maintenance and management work can be carried out smoothly, according to the current development trend of the city, further research on the municipal drainage system maintenance and management, formulate reasonable measures to solve the existing problems, and the maintenance and management work for a reasonable arrangement. In particular, we should formulate reasonable solutions to lay a solid foundation for the smooth expansion of the maintenance and management of the drainage system^[3].

3.1 Reasonable planning of the project

For the reconstruction of the urban drainage system in the old city, relevant departments must study and study the planning and design information of the drainage system beforehand, analyze the population trend in the old urban area, formulate the transformation plan according to the urban development trend in the future, in order to reduce the inconvenience of people travel and urban traffic, the detailed plans are as follows: first, it is necessary to analyze the validity of the argument. It is very difficult to transform the drainage system in the old urban area, which will bring great influence on the life of the residents and invest more money. In this regard, the relevant departments will carry out effective analysis and demonstration, and mainly analyze the construction season, construction time and construction technology, so as to reduce the adverse effects brought by transformation work. From one point of view, we should try to transform the rain less season, prevent the rainwater from the urban waterlogging, and obstruct the implementation of the reform work. From another point of view, the transformation date and technology are clearly defined, and the reform work can be completed on time under the premise of ensuring the quality of the transformation. Besides, in the preparation of drainage system, we should keep pace with the pace of urbanization, ensure that the drainage system's quality and drainage effect can meet the future urban development standards as far as possible. Secondly, it is reasonable to draw up the reform plan scientifically and rationally. In order to reduce the impact of the reconstruction work on surrounding residents, the relevant departments must draw up a scientific and reasonable plan for reconstruction and do a good job in the management of domestic sewage discharge within the scope of reconstruction. They also regularly publish the renovation plan and prepare the local residents. Finally, do a good job of urban road dredging. In the process of transformation, the relevant departments should do well in dredging the urban roads, arrange the sheltered areas reasonably, and ask the vehicles to avoid the construction area as far as possible, so as to avoid causing traffic jams.

3.2 Put the maintenance and management details into place

In the maintenance and management of municipal drainage system, there will be a lot of details. The implementation of the details can improve the quality of maintenance and management. In this regard, according to the actual situation of urban drainage system maintenance and management, the relevant departments should explore the problems existing in the maintenance and management work and formulate reasonable solutions. First of all, grasp the content of drainage maintenance and management. In order to better implement the details of the maintenance and management of the municipal drainage system, relevant departments should further clarify and maintain the distribution of drainage systems and point out the key points of maintenance and management, lay a solid foundation for the implementation of maintenance and management. Second, improve the supervision of maintenance and management details. In order to put the municipal drainage system maintenance and management details in place, relevant

departments should improve the management responsibility, regularly carry out responsibility training of management personnel, allow managers to watch the video about the responsibility of education, and make the managers better understand the importance of responsibility, and take the person in charge to look at every work of the maintenance and management of the drainage system. In addition, in order to better supervise and manage the implementation of drainage system maintenance and management of staff, the relevant departments should formulate a reasonable standard system and dispatch special staff to supervise and promptly solve the problem, punish and criticize according to the actual situation, encourage managers to put the maintenance and management work into practice. Finally, we should pay attention to the summary of maintenance and management. In order to find the problems existing in the maintenance and management of municipal drainage system, and lay a foundation for the subsequent work smoothly, the managers of relevant departments should summarize and review their work according to their own work experience, so as to improve their working efficiency^[4].

3.3 Improve the comprehensive level of managers

In order to improve the quality of municipal drainage system maintenance and management, it is necessary to improve the comprehensive management level personnel, relevant departments according to the drainage system maintenance and management work, create a professional management team, train the talents for the maintenance and management of drainage system. First, pay attention to the skills assessment of maintenance and management. In the recruitment of management personnel, the relevant departments should pay attention to the assessment of the maintenance and management of municipal drainage system, and people can be hired only when they meet the requirements of the standard. At the same time, the relevant departments should regularly assess the skills of the managers, master the professional skill level of the managers, and encourage them to learn constantly. Second, arrange regular skills training. In order to enhance the level of management personnel in drainage system maintenance and management, relevant departments should regularly organize skills training and constantly sum up the problems of maintenance and management work and gain experience in the training process. Finally, to formulate commonality measures. In order to improve the efficiency of municipal drainage system maintenance and management, for drainage system common faults, we must make reasonable solutions, so as to provide guarantee for the smooth implementation of maintenance and management. For example, pipeline congestion, pipe disjuncting and fracture, and pipeline deformation and subsidence are common phenomena of drainage pipes. When the pipe is congested, the pipe can be cleaned with high pressure emitter and hydraulic flushing car. When the congestion is serious, it is necessary to carry out mechanical cleaning. When the pipe is disjuncted and broken, it is necessary to find the root of the disjuncted and take effective maintenance methods. When the pipeline is deformed and sunk, most of it is caused by the sinking of the pipe foundation. It is necessary to carry out the excavation work and stabilize the pipe.

Conclusion

To sum up, with the continuous development of China's modern economy, to a great extent, the pace of the process of urbanization has been promoted. In the process of maintenance and management of municipal drainage system, we must make reasonable analysis and formulate effective management measures to improve the efficiency of drainage system.

References

1. Zhongluan Liu, Bo Yang. Discussion on the Construction and Improvement of the Municipal Drainage System and the Improvement of [J]. *Technology Information* 2015; (1): 57-59.
2. Yingxiang Ban. Municipal Drainage System Treatment of Rainstorm Water Accumulation Measures Analysis [J]. *Scientific and Technological Innovation and Application* 2015; (10): 146-147.
3. Feng Lin. Countermeasures for the Operation, Maintenance and Management of Municipal Drainage Pipes [J]. *Building Materials and Decoration* 2016; (13): 163-164.
4. Gang Li, Lihua Yu. Common Problems and Prevention Measures in The Construction of Municipal Drainage System [J]. *Urban Construction* 2016; (12): 241-242.