

# Study on the pollution control scheme of Liuyang River drainage outlet

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# 01 Study on the background (研究背景)

LiuYang River is an important model of building a happy river and lake in HuNan Province, carrying the sewage and wastewater of life and industry in ChangSha City. The situation of ecological pollution is becoming more and more severe. With the development of society and economy, rivers discharge waste water in cities. When the total amount continues to increase, the pressure of pollution load becomes greater and greater, gradually exceeding its own water environment capacity, making the river The river ecological environment has been destroyed, so it is urgent to protect the river ecological environment..

浏阳河是湖南省打造幸福河湖的重要典范，承载着长沙市生活和工业的污废水排放，面临的生态污染的形势越加严峻。随着社会经济的发展，河流在城市污废水排放总量不断增加情况下，污染负荷的压力越来越大，逐步超过自身的水环境容量，使得河流生态环境遭到破坏，保护河流生态环境已刻不容缓。



## 02 Basic situation (基本情况)

### ● Sewage outlet into the river (入河排污口)

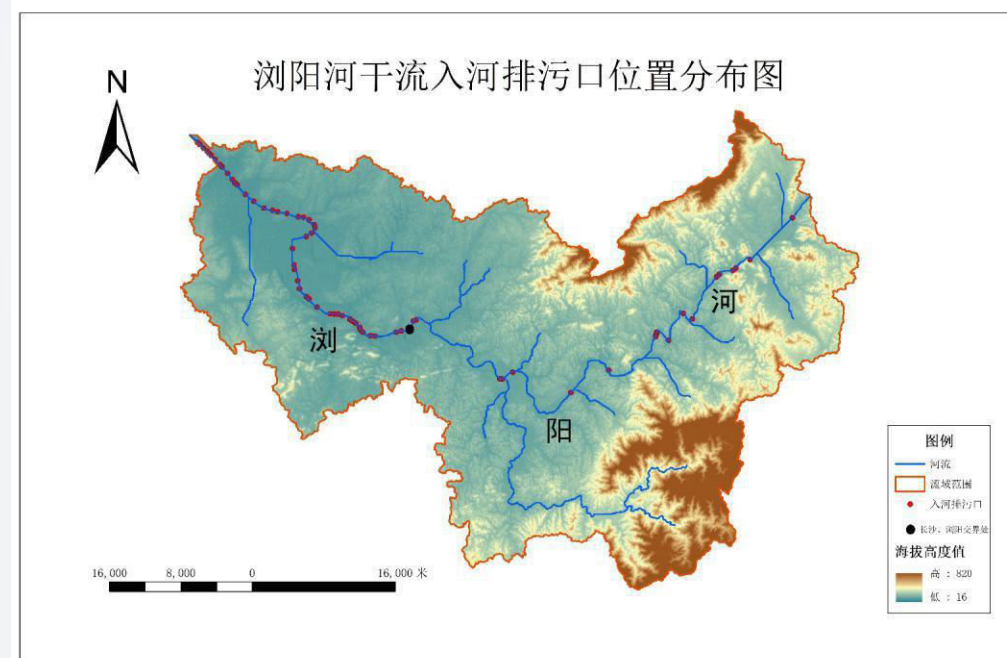
There are 77 sewage outlets in the main inflow river of LiuYang River, and the drainage outlets along the river are distributed in LiuYang City, ChangSha County, YuHua District, KaiFu District and Furong District.

浏阳河干流入河排污口共有77个，沿岸的入河排污口分布于浏阳市、长沙县、雨花区、开福区和芙蓉区。

### ● emission (排放量)

In the whole year, a total of 485 million tons of waste water were discharged from the sewage outlet of LiuYang River, and 12,672.52 tons of main pollutants were monitored into the river. The inflow of COD into the river is 11528.43 tons, the inflow of ammonia nitrogen is 1054.84 tons, and the inflow of total phosphorus is 89.25 tons..

全年浏阳河干流入河排污口共排放污废水4.85亿吨，主要监测污染物的入河量为12672.52吨。其中COD入河量11528.43吨，氨氮入河量1054.84吨，总磷入河量89.25吨。



Map of sewage outlet in river  
入河排污口分布图

## 02 Basic situation (基本情况)

### ● Water quality assessment section (水质评价断面)

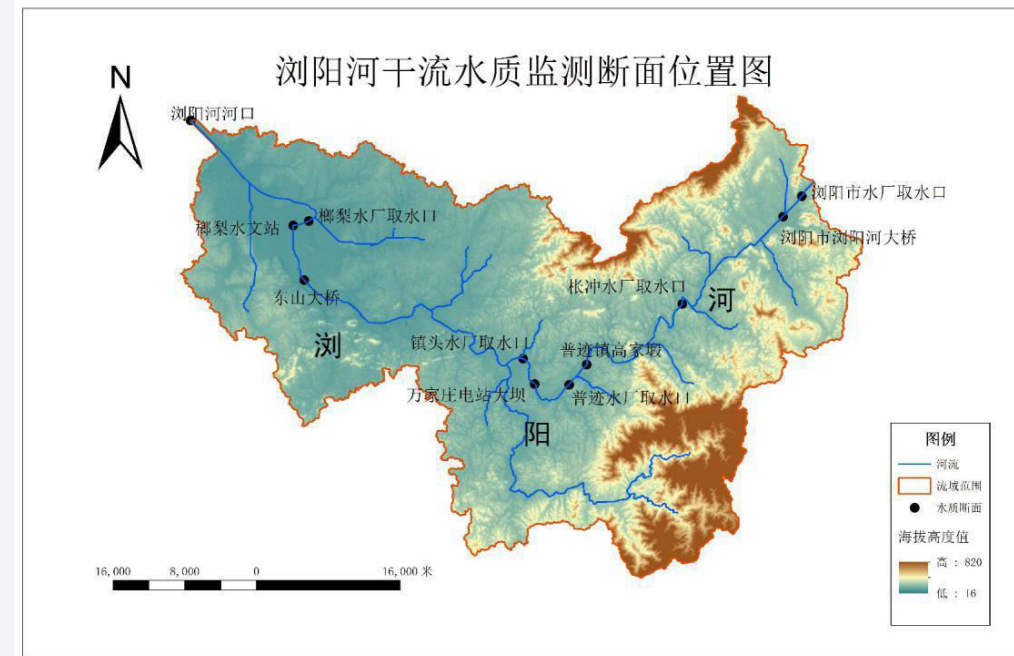
The water quality generation of 11 water functional areas in LiuYang River main stream was selected. The surface section is used as the water quality evaluation section.

选取浏阳河干流中11个水功能区的水质代表断面作为水质评价断面。

### ● Current water quality assessment (现状水质评价)

Using the single factor index method and the comprehensive pollution index method, the water quality of LiuYang River is good on the whole, but some water quality sections are not up to standard in the dry season.

采用单因子指数法和综合污染指数法进行综合评价，浏阳河水质整体较好，仅在枯水期存在部分水质断面不达标。



Water quality monitoring section  
入河排污口分布图

## 03 Water environmental capacity (水环境容量)

- Water environmental capacity (水环境容量)

The water environmental capacity of LiuYang River is calculated by using one-dimensional water quality calculation model, in which COD is 19165.08 tons, ammonia nitrogen is 1833.70 tons, and total phosphorus is 210.92 tons..

采用一维水质计算模型计算得到浏阳河水环境容量，其中COD为19165.08吨，氨氮为1833.70吨，总磷为210.92吨。

- Exceedance condition (超标情况)

Although the total amount of pollutants entering the river does not exceed the standard, ammonia nitrogen and total phosphorus exceed the standard in some water functional areas.

虽然入河污染物总量不超标，但部分水功能区存在氨氮、总磷超标的情况。

- Cause analysis (原因分析)

Coastal population and industrial density, sewage discharge is large; The sewage generated by livestock and poultry breeding in rural areas lacks treatment, and the pressure of non-point source pollution is great..

沿岸人口和工业密度多，污水排放量较大；农村地区的畜禽养殖产生的污水缺乏处理，面源污染压力大。

## 04 solution (解决对策)

### ● Water quality improvement (水质提升)

Improve the treatment standards of sewage treatment plants.

提高污水处理厂的处理标准。

Strictly control the quality of industrial sewage entering the municipal pipe network.

严格控制工业污水进入市政管网的的水质。

### ● Agricultural sewage treatment (农业污水治理)

In rural areas, new sewage treatment facilities will be built to treat domestic sewage and sewage from large-scale farming.

在农村新建污水处理设施，将生活污水和规模化养殖的污水纳入处理。

Reduce the use of chemical fertilizers and pesticides, and promote organic fertilizers.

减少化肥农药的使用，推广有机肥。

### ● Sewage inlet treatment (入河排污口处理)

Shut down heavily polluted river inlet and discharge outlets and incorporate them into municipal pipe networks.

关停污染严重的入河排污口，纳入市政管网。

Monitor key river discharge outlets and strictly comply with standards.

监控重点入河排污口，严格达标排放。

The water environment capacity of Liuyang River basin water functional area is verified, and solutions to excessive pollutants are proposed according to the situation of exceeding the standard of each functional area, so as to promote the transformation of the economic development model along the Liuyang River, help protect the ecological environment of Liuyang River, and lead the economy to move forward in the direction of health and green.

对浏阳河流域水功能区水环境容量进行核定，根据各功能区超标的情况，提出污染物超标的解决对策，促进浏阳河沿岸经济发展模式的转变，有利于保护浏阳河的生态环境，引领经济向着健康绿色的方向不断迈进。





# Thanks for listening!

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