

The  $C_2$  value standard of flood control embankment length: whether the total length of urban flood control embankment conforms to the design code of urban flood control embankment.

**Table S1.**Fuzzy description of the length of the levee

Length of the levee $C_2$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Length<10km	1
Level 2	Length between 10km and 15km	2
Level 3	Length between 16km and 12km	3
Level 4: The best plan $Y^+$	Length>20km	4

Criteria for the  $C_3$  value of drainage pipe length: whether the total length of drainage pipe conforms to the urban drainage engineering planning standards.

**Table S2.**Fuzzy description of drainage pipe length

Length of the drainage pipe $C_3$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Length<5000km	1
Level 2	Length between 5000km and 10000km	2
Level 3	Length between 10000km and 15000km	3
Level 4: The best plan $Y^+$	Length>15000km	4

The value standard of pumping and discharging capacity  $C_4$  of central urban water pump: the total pumping and discharging capacity of central urban water pump station.

**Table S3.**Fuzzy description of pumping and discharging capacity of central urban water pump

Pumping and discharging capacity of central urban water pump $C_4$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Capacity<400m <sup>3</sup> ·s <sup>-1</sup>	1
Level 2	Capacity between 400m <sup>3</sup> ·s <sup>-1</sup> and 600m <sup>3</sup> ·s <sup>-1</sup>	2
Level 3	Capacity between 600m <sup>3</sup> ·s <sup>-1</sup> and	3

	$800\text{m}^3\cdot\text{s}^{-1}$	
Level 4: The best plan Y <sup>+</sup>	Capacity $>800\text{m}^3\cdot\text{s}^{-1}$	4

Value standard of road area per capita C<sub>5</sub>: road area per capita calculated according to urban population. The overall well-off target value is 12m<sup>2</sup>.

**Table S4.**Fuzzy description of per capita road area

Per capita road area C <sub>5</sub>	Scoring criteria	Score
Level 1: The worst plan Y <sup>-</sup>	Per capita road area $<4\text{m}^2$	1
Level 2	Per capita road area between 4m <sup>2</sup> and 8m <sup>2</sup>	2
Level 3	Per capita road area between 8m <sup>2</sup> and 12m <sup>2</sup>	3
Level 4: The best plan Y <sup>+</sup>	Per capita road area $>12\text{m}^2$	4

Average number of students in institutions of higher learning per 10,000 population C<sub>6</sub> value standard: number of students in institutions of higher learning per 10,000 population.

**Table S5.**Fuzzy description of the average number of students in institutions of higher learning per 10,000 population

Average number of students in institutions of higher learning per 10,000 population C <sub>6</sub>	Scoring criteria	Score
Level 1: The worst plan Y <sup>-</sup>	The number of students $<1000$	1
Level 2	The number of students between 1000 and 1500	2
Level 3	The number of students between 1500 and 2000	3
Level 4: The best plan Y <sup>+</sup>	The number of students $>2000$	4

Employment rate C<sub>8</sub> value standard: the proportion of urban employment in the total number of people.

**Table S6.**Fuzzy description of employment rate

Employment rate $C_8$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Employment rate < 70%	1
Level 2	Employment rate between 70% and 80%	2
Level 3	Employment rate between 80% and 90%	3
Level 4: The best plan $Y^+$	Employment rate > 90%	4

The value standard of urban medical insurance popularity  $C_9$ : the proportion of the number of people covered by urban medical insurance to the total urban population.

**Table S7.**Fuzzy description of urban medical insurance popularity

Urban medical insurance popularity $C_9$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Popularity < 70%	1
Level 2	Popularity between 70% and 80%	2
Level 3	Popularity between 80% and 90%	3
Level 4: The best plan $Y^+$	Popularity > 90%	4

Value standard of  $C_{10}$  for health beds per 1000 population: the number of health beds per 1000 population in medical and health institutions.

**Table S8.**Fuzzy description of sanitary beds per 1000 population

Sanitary beds per 1000 population $C_{10}$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Sanitary bed number < 4	1
Level 2	Sanitary bed number between 4 and 5	2
Level 3	Sanitary bed number between 5 and 6	3
Level 4: The best plan $Y^+$	Sanitary bed number > 6	4

Number of health workers per 1000 population  $C_{11}$  value standard: number of health workers per 1000 population.

**Table S9.**Fuzzy description of the number of health workers per 1,000 population

Number of health workers per 1,000 population C <sub>11</sub>	Scoring criteria	Score
Level 1: The worst plan Y <sup>-</sup>	Number of staff<10	1
Level 2	Number of staff between 10 and 15	2
Level 3	Number of staff between 15 and 20	3
Level 4: The best plan Y <sup>+</sup>	Number of staff>20	4

Value standard of green coverage rate C<sub>13</sub> of built-up area: the percentage of green coverage area of urban built-up area in built-up area.

**Table S10.**Fuzzy description of greening coverage rate in built-up areas

Greening coverage rate in built-up areas C <sub>13</sub>	Scoring criteria	Score
Level 1: The worst plan Y <sup>-</sup>	Greening coverage rate in built-up areas<20%	1
Level 2	Greening coverage rate in built-up areas between 20% and 30%	2
Level 3	Greening coverage rate in built-up areas between 30% and 40%	3
Level 4: The best plan Y <sup>+</sup>	Greening coverage rate in built-up areas>40%	4

Lake-river surface area C<sub>14</sub> value standard: the total surface area of rivers and lakes.

**Table S11.**Fuzzy description of lake and river surface area

Lake and river surface area C <sub>14</sub>	Scoring criteria	Score
Level 1: The worst plan Y <sup>-</sup>	Lake and river surface area<10km <sup>2</sup>	1
Level 2	Lake and river surface area between 10km <sup>2</sup> and 30km <sup>2</sup>	2
Level 3	Lake and river surface area between 30km <sup>2</sup> and 50km <sup>2</sup>	3
Level 4: The best plan Y <sup>+</sup>	Lake and river surface area>50km <sup>2</sup>	4

Paddy area  $C_{15}$  value standard: the size of the land area used for paddy field cultivation in the city.

**Table S12.**Fuzzy description of paddy farmland area

Paddy farmland area $C_{15}$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Paddy farmland area $<1000\text{km}^2$	1
Level 2	Paddy farmland area between $1000\text{km}^2$ and $2000\text{km}^2$	2
Level 3	Paddy farmland area between $2000\text{km}^2$ and $3000\text{km}^2$	3
Level 4: The best plan $Y^+$	Paddy farmland area $>3000\text{km}^2$	4

Reservoir capacity  $C_{16}$  value standard: urban reservoir total capacity value.

**Table S13.**Fuzzy description of reservoir capacity

Reservoir capacity $C_{16}$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Reservoir capacity $<100$ billion $\text{m}^3$	1
Level 2	Reservoir capacity between 100 billion and 250 billion $\text{m}^3$	2
Level 3	Reservoir capacity between 250 billion $\text{m}^3$ and 500 billion $\text{m}^3$	3
Level 4: The best plan $Y^+$	Reservoir capacity $>500$ billion $\text{m}^3$	4

The value standard of  $C_{17}$  for comprehensive production capacity of water plant: the comprehensive production capacity of urban water plant.

**Table S14.**Fuzzy description of comprehensive production capacity of water plant

Comprehensive production capacity of water plant $C_{17}$	Scoring criteria	Score
Level 1: The worst plan $Y^-$	Comprehensive production capacity $<10$ million $\text{t}\cdot\text{d}^{-1}$	1
Level 2	Comprehensive production capacity between 10 million $\text{t}\cdot\text{d}^{-1}$ and 50	2

	million t·d <sup>-1</sup>	
Level 3	Comprehensive production capacity between 50 million t·d <sup>-1</sup> and 100 million t·d <sup>-1</sup>	3
Level 4: The best plan Y <sup>+</sup>	Comprehensive production capacity > 100 million t·d <sup>-1</sup>	4

Wastewater treatment capacity C<sub>18</sub> value standard: sewage treatment plant daily capacity of sewage.

**Table S15.** Fuzzy description of sewage treatment capacity

Sewage treatment capacity C <sub>18</sub>	Scoring criteria	Score
Level 1: The worst plan Y <sup>-</sup>	Sewage treatment capacity < 2 million m <sup>3</sup> ·d <sup>-1</sup>	1
Level 2	Sewage treatment capacity between 2 million m <sup>3</sup> ·d <sup>-1</sup> and 3 million m <sup>3</sup> ·d <sup>-1</sup>	2
Level 3	Sewage treatment capacity between 3 million m <sup>3</sup> ·d <sup>-1</sup> and 4 million m <sup>3</sup> ·d <sup>-1</sup>	3
Level 4: The best plan Y <sup>+</sup>	Sewage treatment capacity > 4 million m <sup>3</sup> ·d <sup>-1</sup>	4