Tianjin Metro Stop Placement Analysis and Proposals

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Contents

Introduction

The focus of my Urban Planning research project is to examine our public transportation system and identify misplaced or poorly planned subway stops. In China, having a subway stop near your home or business will make the land value of your home or businesses go up by a lot. Therefore, in the past, subway stop placement has been associated with a high level of corruption.

It is my purposes to one day expose the poor planning or corruption by analyzing the placement of the subway stops and finding out how suitable the placement is based on how many potential people the stop could serve. This is not a scientific study, since as a high school student, I was not able to spend a large amount of time and resources to analyze the placements. In addition, there may be other factors that could justify a bad placement such as geological factors (ground water, pipes, etc.) that I am unaware of.

METRO PLACEMENT ROPOSAL #1

Original location

Geographic Location: North Tianjin

Longitude: 117.153653

Latitude: 39.178331

Name of Metro : Qin Jian Dao Stop

Left: satellite imagery   *Right: map*

The red line is the original line designed by the government, which I think the line needs to have improvements or relocation of 1 stop. You can see from the diagram, there are differently colored arrows, the green arrows indicate the "problem stop" which is ineffective to most people. Diagrams above are general; I shall give a more specific diagram in next stage.

More Specific Information For Problem Stop # 1
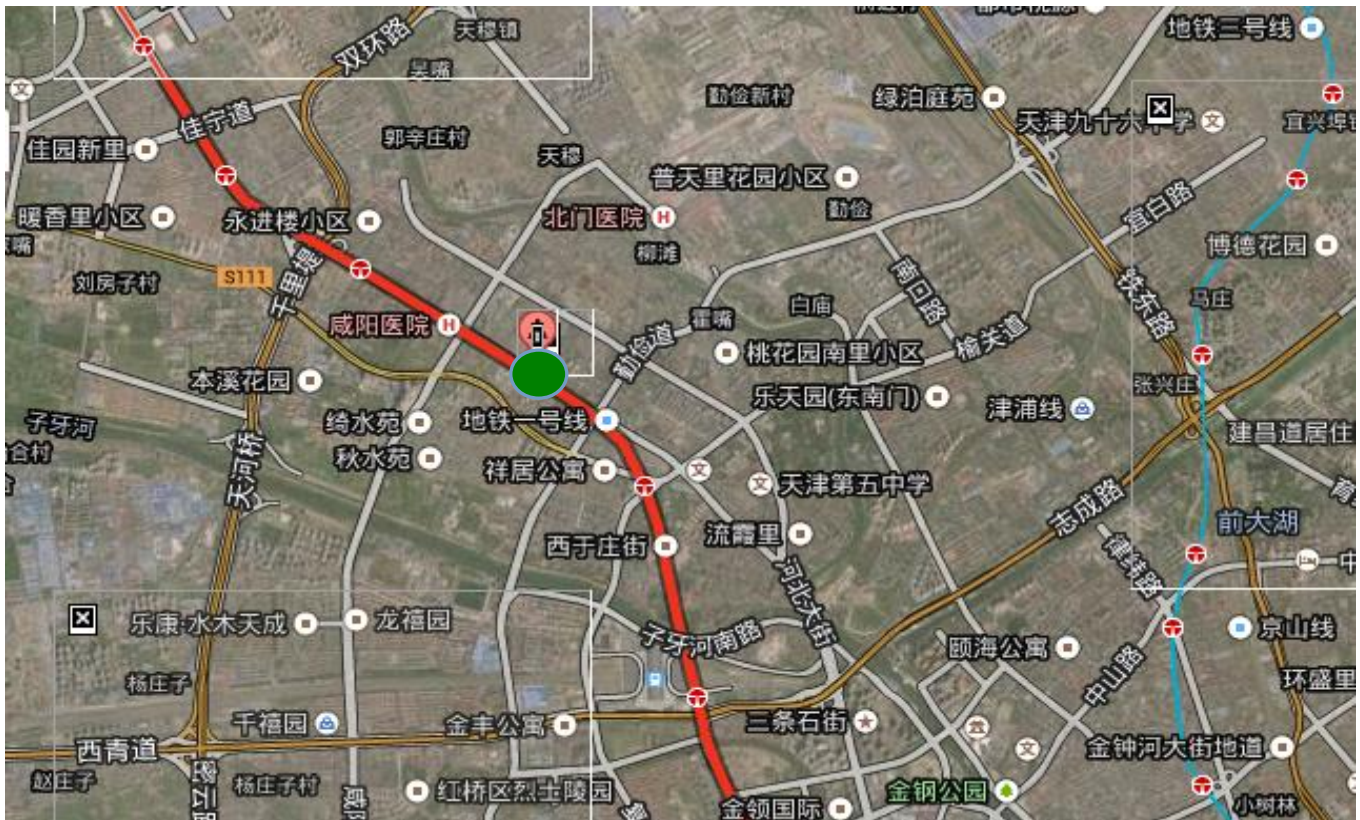
Map of Problem Stop #1, satellite view and road map.

Close Up Analysis of Problem Stop # 1 ●
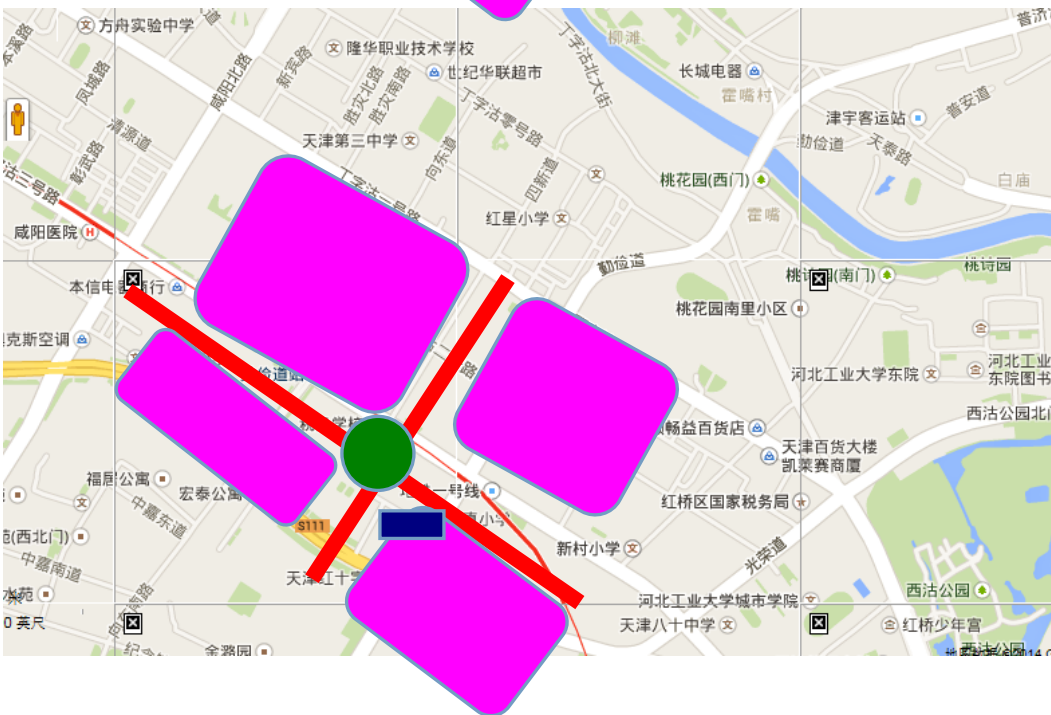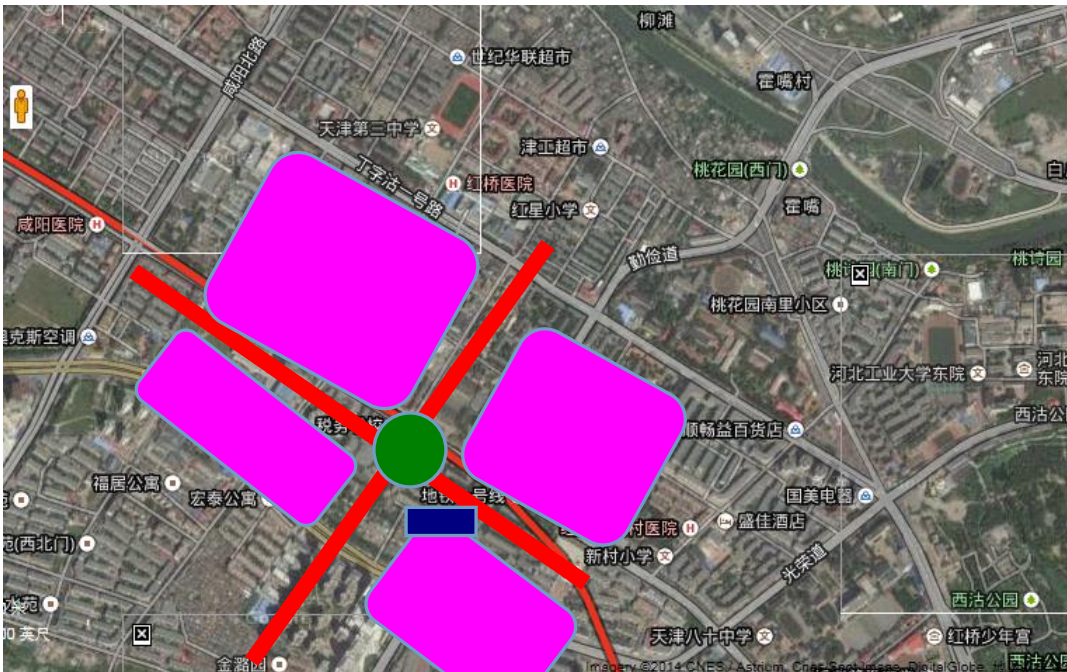
We can see from first sight, there are not many buildings or places contained by people near the green stop. ●

1. An intersection with Ding Zi Gu Third Road and Wine Road .(red cross) ┼
2. A middle school named Taxation. This school is not famous in Tianjin, few people know it. The name of school attracts me a lot. Later, I will discover the secrets behind that. By the way, taxation is always a common source of corruption in China.(dark blue rectangle) ▬
3. There are also huge areas of undeveloped land.(pink rectangle) ▮

Altogether, the stop is only beneficial to the taxation school, for both workers and students, but no obvious benefits to others.

Search in Surrounding of Problem Stop #1

PROBLEM STOP #1

1. The taxation school

This is a technical school which is unknown by most people in Tianjin. This is the only significant location near the train station. No other buildings or location holds a large grouping of people. *500~600 people is estimated in Taxation School.*

Close Up Aalysis of Proposed Stop # 1

The new proposed stop is the Blue Triangle. This new stop is the logical choice. Although it seems near the old stop, it is actually two city blocks away and that makes a big difference especially if you see what is around Proposed Stop #1.The black line is the newlly partial line for my proposed stop # 1.
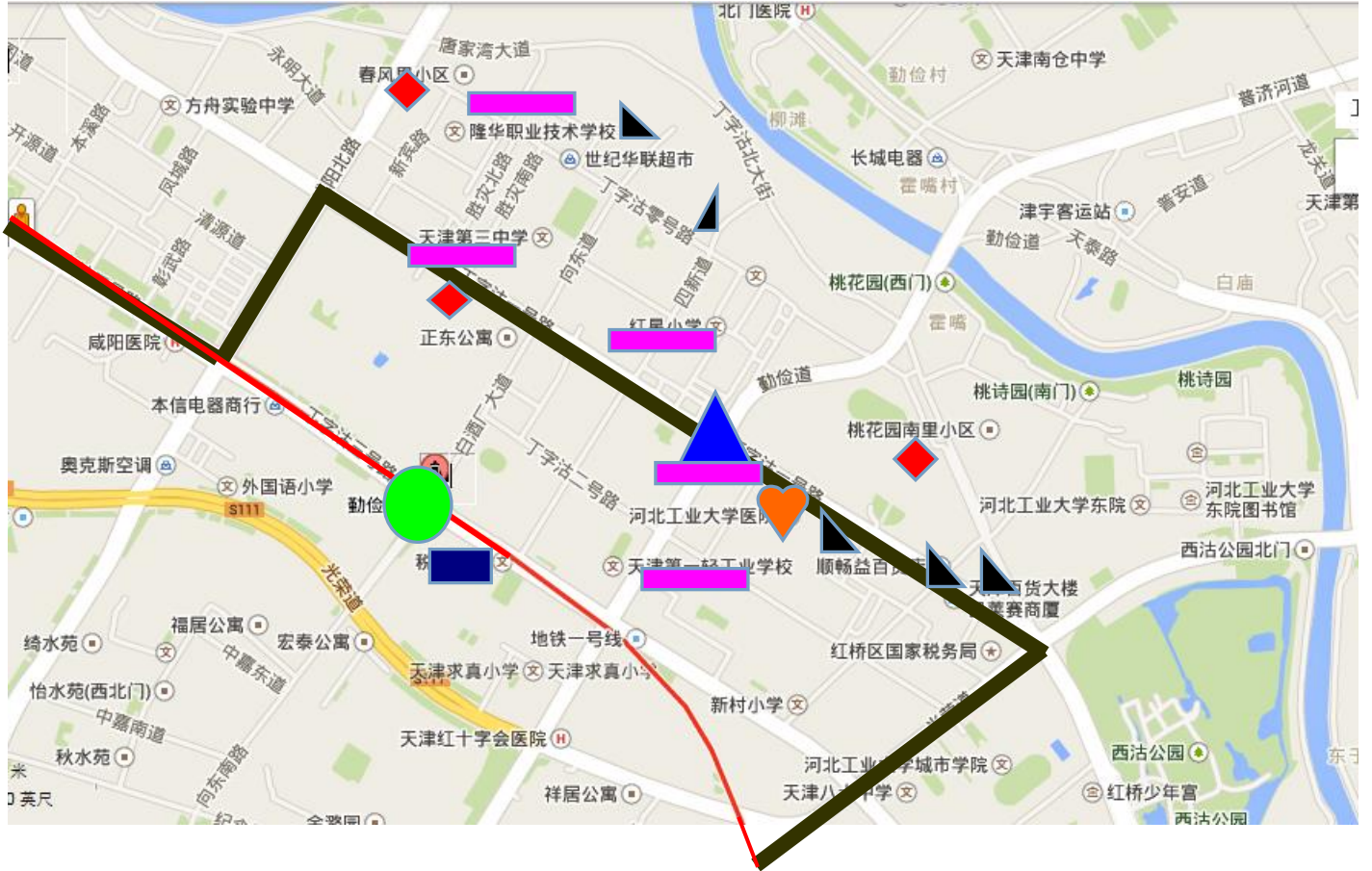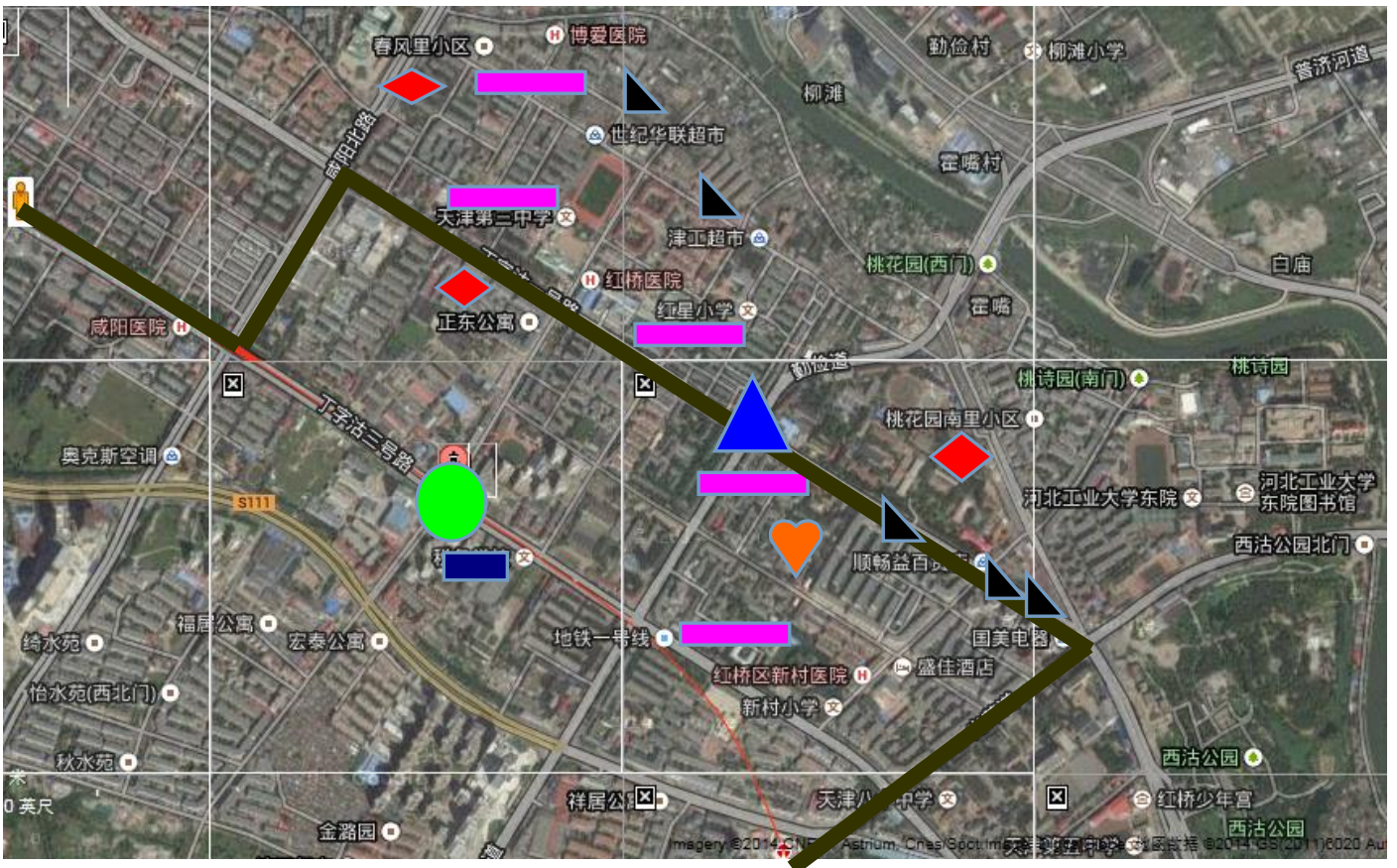
1.There are 5 schools.(No.3 Middle School of Tianjin l, Lonhua Technical School, Red Star Primary School, Hebei University of Technology, Tianjin Light Industry School)(pink rectangle)

2.There are 3 communities.(Chunfengli community, Zhengdong apartment, Southern Taohua Garden community)(red diamond)

3.There are 5 shopping places.(Century supermarket, Jingong convenience store, Shun Yi Chang department store, Tianjin department store and GOME)(black triangle.

4.There is 1 hospital. (the hospital of Hebei Industry University)(orange heart)

Altogether, there are more streams of people in this block. Schools, hospitals and shopping centers are the places where need public transport a lot. It is reasonable to relocate my proposed stop nearby this block.

Search In Surrounding of Proposed Stop #1

1. No.3 Middle School of Tianjin

This is the first government secondary school in recent years in Tianjin. The school was built in 9, March, 1901 and was rewarded to be the one of eight key schools in Tianjin's history. *At least 3,000 students are studying and 600 staff are working.*

2. Longhua Technical School

This is a technical school which is unknown by most people in Tianjin. *300~400 people is estimated in Longhua School.*

3. Red Star Primary School

*Primary school is estimated to have at least 800 students and 160 staff.*

4. Hebei University of Technology

The university was built in 1903. *There are 2,300 staff and 11 thousands students in this school.*

5. Tianjin Light Industry School

The school was built in September 1958. *The school has 240 staff and 1300 students.*

6. Chunfengli community

The community was built in May 2000. In Tianjin, I suppose it is a relatively old community. Specifically, the price is 13,417 RMB per square meter. The greening rate is 30%. Occupancy rate is 78%. There are 600 available housing. Total area is 169,000 square meters. *If we assume each apartment contains 3.4 people, then we can calculate that 1,591 of people live there. [(600*.78)*3.4] = 1591*

7. Zhengdong Apartment

The apartment was built in July 1999. In Tianjin, I suppose it is a relatively old community. The price of the apartment is 14823 RMB per square meter. Greening rate is 18%. Occupancy rate is 72%. There are 800 available housing. Total area is 65200 square meters. *If we assume each apartment contains 3.4 people, then we can calculate that 1,958 of people live there. [(800*.72)*3.4] = 1,958*

8. Southern Taohua Garden Community

The community was built in November 1988. In Tianjin, it is a very old community. The price of the community is 13400 RMB per square meter. Greening rate is 23%. Occupancy rate is 80%. There are 200 available housing. Total area is 115880 square meters. A huge community has lake and garden. *If we assume each apartment contains 3.4 people, then we can calculate that 544 of people live there. [(200*.80)*3.4] =544*

9. Century supermarket

This supermarket was built in 1991. Century supermarket is one of the biggest chain of supermarkets in Tianjin, even China. *In average, 2000 costumers per day.*

10. Jin Gong Convenience Store

Jin Gong Convenience Store in the biggest community chain of store in Tianjin. It has more than 380 chain stores in Tianjin. It develops many kinds of service, such as paying phone bills, paying traffic tickets, paying electricity bills and free delivery to the door for elderly. Because it is a small-scale store, *only 60 people come here to buy things* or enjoy the service per day.

11. Shun Chang Yi Apartment store

This is a ownership store ran by normal citizen. *Up to 50 people per day shop here.*

12. Tianjin Department Store

Tianjin Department store is the oldest shopping center in Tianjin. Mosy middle aged and elderly would love to go there. Its positioning people are not teenagers, although some students love going there, too. Because it also contains sports brands, such Nike and Adidas. *There are at least 3600 people per day.*

13.GOME

GOME is one of the two biggest Electrical Equipment Store in Tianjin, the other one is Su Ning Electrical Equipment Store. There are 1063 chains in China throughout 266 cities. Its headquarter is in Hong Kong. One day, nearly 2000 people would go there. But more in weekends and holidays.

14.The Hospital of He Bei University of Technology

This is a hospital belonged to He Bei University of Technology. So this is not a large- scale hospital which can compare with some specialized hospitals. However, the hottest place in China is a hospital. Although this is not the best hospital, more than 4000 people will go there per day. *They have 100 doctors and staff. We can sum up, then get 4,100 people would be in the hospital on a daily basis.*

RELOCATION AND CONCLUSION FOR STOP #1

longitude: 117.093081

latitude: 39.139415

Although Proposed Stop #1 is two city blocks away from the original stop, it will make a huge difference to an estimated *35,703 daily commuters*. I am not certain how many of these potential commuters are actually taking the subway, but I do know with the new location, many more thousands of people will have access to the subway stop.

So, the blue line is a line after relocation, the blue triangle is the new stop that I add. *The proposed stop is 1.8 kilometers away from the original one directly. We also cut 1.7 kilometers and add 4.4 kilometers line.*
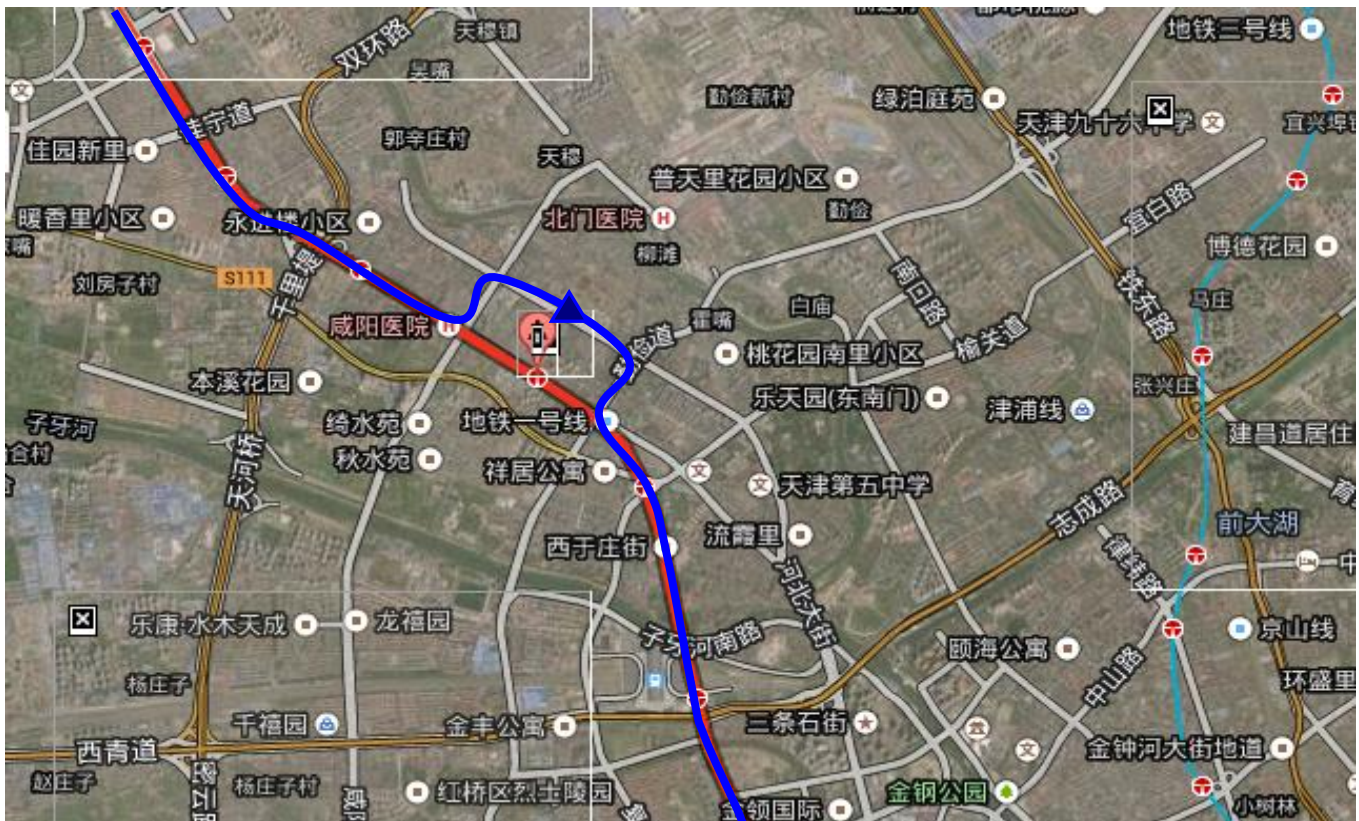
METRO PLACEMENT ROPOSAL #2

Original location

Geographic Location: <u>Northwest Tianjin</u>

Longitude: <u>117.091133</u>

Latitude: <u>39.145749</u>

Name of Metro : Cao Zhuang Stop

satellite imagery

map

The black line is the original line designed by the government, which I think the line needs to have improvements or relocation of 1 stop. You can see from the diagram, there are arrows, the red arrows indicate the "problem stop" which is ineffective to most people. Diagrams above are general; I shall give a more specific diagram in next stage.

# *More Specific Information for Problem Stop #2*

Map of Problem Stop #1, satellite view and road map.

Close Up Analysis of Problem Stop # 2
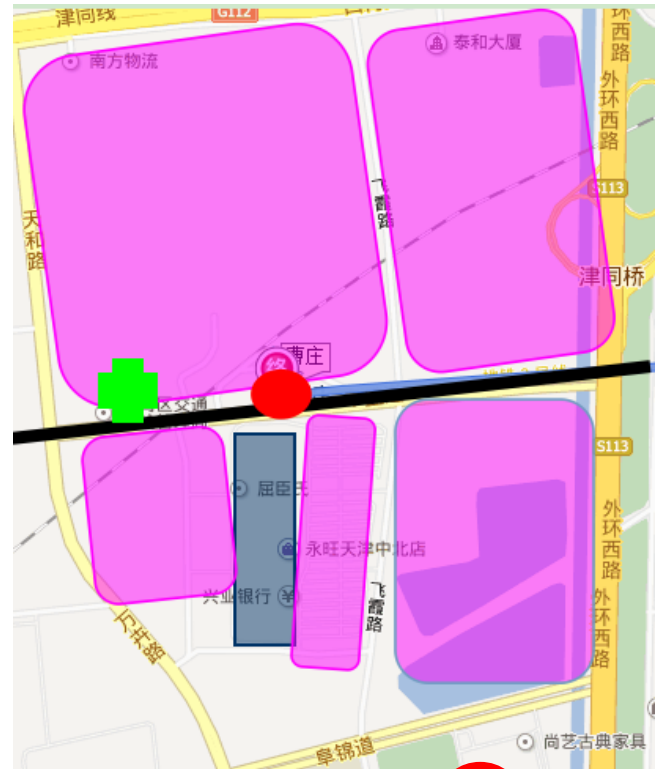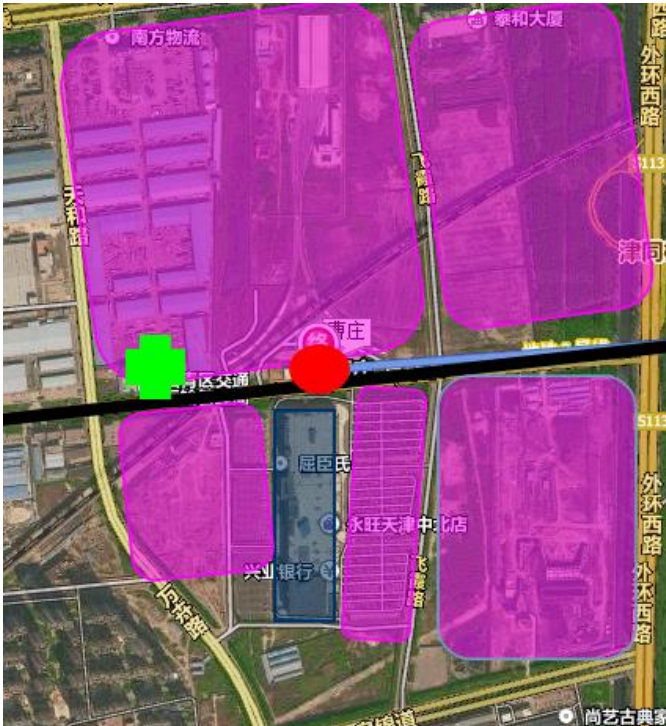
We can see from first sight, there are not so much buildings or places contained people near the red stop.

1. To the left hand of problem stop, there is a MTA(metropolitan transit authority)of Xiqing. Perhaps this was the reason why the government located this stop right here. In China, MTA acts as an essential role and MTA has priority and authority of lots of affairs. Also, corruption is one of the problem of their operation. Most subway is likely to locate stops near them for pleasing MTA. MTA is one of their superior.(light green cross)

2.There are five available lands which are still free, I cannot say there are no people, but they are not public places   or popular places to the most citizens. So, I suppose we can call them "land" still.. (pink rectangle)

2. A shopping mall named Aeon Tianjin is to the south of the stop. This shopping mall is little known in Tianjin and its positioning customer is to the most of normal citizens as well bottom labors, such as farmers. Inside the shopping mall, there are lots of outdated styles and cheap brands, so teenagers and fashioners almost give up this place. In addition, the shopping mall serves most of near residents. Because of remote location, only the one who lives in closed community will come and buy things. Nearly few people would come here by tube. I suppose government will not locate here as the result of convenience people who intend to go shopping mall. However, the Aeon is a big consortium, maybe some correlations occur or we can directly call corruption.(blue rectangle)

Altogether, something is near the problem stop, but there is few people need it and one of them is obvious corruption,. The other one is such not so apparent, however, we can still smell the corruption.

Search in Surrounding of Problem Stop #2

PROBLEM STOP #2

1. Metropolitan Transit Authority of Xiqing

This authority's chief is Liu Guisheng. It setted up in December 30th, 1992. This is a state-owned business aiming profit but not providing better service to public. *There are total 30 people in this business, including employees and employers.*

2. Aeon shopping mall of Tianjin

It is located in the remote area of Tianjin, about 15 kilometers away from downtown Tianjin. It is a large mall with around 90,000 square meters and it has 5 floors. There are 3,700 parking spaces in this area, but parking ratio is only below one fifth of capacity. It opened nearly three years ago, but still very few people go to this place. *On average, there are 3,590 people who visit this mall each day.*

Close Up Analysis of Proposed Stop # 2

The new proposed stop is the Blue Triangle. This new stop is the logical choice. Although it seems near the old stop, it is actually two city blocks away and that makes a big difference especially if you see what is around Proposed Stop #2. The red line is the newly partial line for my proposed stop # 2.

The map only shows a huge area (light green rectangle), but not directly presents the things inside this huge area. So I decide to give you a more specific idea about what's inside.
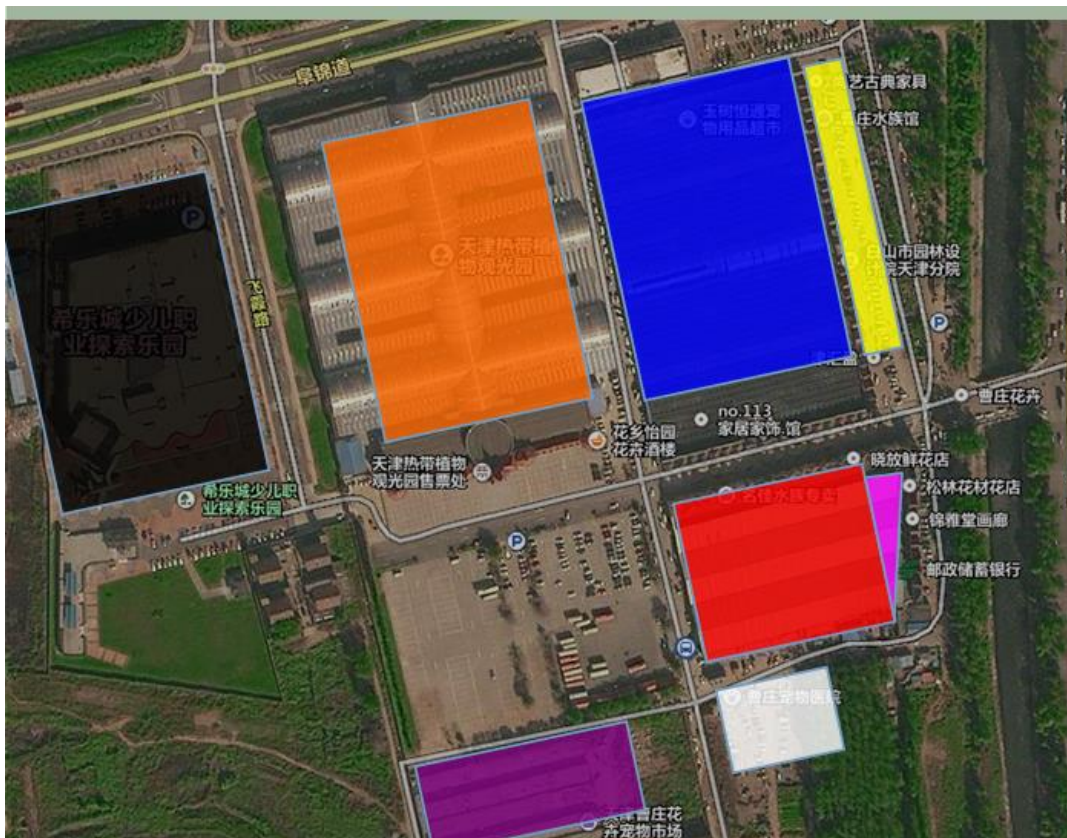
This is an ecological zone and containing 8 parts. Total land area is 45,000 square meters, we still do not know its scale, and because of some of them have 2 or 3 floors.

1. On the northwestern corner of the map, there is a Children Paradise of Greek Music City. (black rectangle)
2. Next to the paradise, a tropical botanical garden is located in the central area of this whole area.(orange rectangle)
3. A pet product market is there.(blue rectangle)
4. There is a market of solid wood furniture on the east.(yellow rectangle)
5. There is an aquamarine market. (red rectangle)
6. To the right hand of fish market, there is a flower street. (pink triangle)
7. A pet market is located in the bottom of this graph.(purple rectangle)
8. The last one is the biggest pet hospital in Tianjin.(white rectangle)

Altogether, this is a fun and popular place in the city. Maybe you can feel the variety of activities you can do here. Here in much more interesting than that shopping mall to the most Chinese and foreigners. Form every corner of Tianjin people would love to come here and the most convenient and fast transport is by subway. Driving cars spend us at least 1 hour from downtown, but subway only costs us 3 Yuan and 10 minutes. So my proposed stop is in the entrance side of this big area, but I still put it near the shopping mall where maybe will cost you few minutes' walk to there. However, if i did not relocate, it only can benefit the people who go to shopping mall. But at here, I balance this two, although the ecological area seems more attractive than the former one.

Search In Surrounding of Proposed Stop #2

1.Children Paradise of Greek Music City

This is a children's recreation center but it is much more different than a normal one. It has many different themes which make children want to cooperate with each other and they are. The themes are all related jobs, such as nurses, kung fu masters, cooks and drivers. The total area of this paradise is 38,000 square meters. It has 61 different themes and 110 jobs children can experience. It is aimed at children within the range of 3 - 15 years old. *Every day, there are more than 2000 children there, and of course, more than 2200 parents there. Also, 200 staff and employees are estimated to work here.*

2. Tropical botanic garden

This is the biggest indoor tropical botanical garden in Asian. There are 5 parts, the general area, desert plant area, the flower area, the science area and the equatorial rainforest area. In different seasons, it has different displays about the plantation. *More than 10,000 people per day would come here for entertainment or taking photos. There is also 543 staff here to receive the tourists and take care of the plants.*

3.Pet product market

This is the biggest pet product market in Tianjin and many people love to go there buy toys, food and cleaner products for our pets. *There are 510 staff this market, and in average 5000 people per day would come and buy things.*

4. Solid wood furniture market

Here there are all kinds of Chinese traditional furniture; elderly people especially love to come here. Most of the items are too expensive for normal people. *There are 100 staff and 3000 people each day.*

5. Aquamarine market

This market is for selling fish and fish related products and this is a rather old area. There are more than 200 shops here, *and at least 320 staff and 2,800 customers here every day.*

6. Flower Market

This is the largest flower market in Tianjin. Millions of kinds of flowers are sold here. *There are 198 sellers and 8,700 people each day.*

7. Pet market

This market is mainly selling dogs, but still has other offerings like lizards, snakes and spiders. *There is 410 staff here and 6,700 people would come here every day.*

8.Pet hospital

I suppose this is an advanced hospital, because their decoration and doctors look so great. *It has 50 staff in here. 200 pets per day, so more than 200 people here each day.*

RELOCATION AND CONCLUSION FOR STOP #2

longitude: <u>117.099569</u>
latitude: <u>39.145425</u>

Although Proposed Stop #2 is a city block away from the original stop, it will make a huge difference to an estimated *42,931 daily commuters*. I am not certain how many of these potential commuters are actually taking the subway, but I do know with the new location, many more thousands of people will have access to the subway stop.

So, the blue line is a line after relocation, the blue triangle is the new stop that I am proposing. *The proposed stop is 1.6 kilometers away from the original one. We also cut 3.4 kilometers and add 2.7 kilometers line.*

DESIGN OF QUESTIONAIRE

Why did I do this?

Because I am just a student from high school, I did not know how to use systematic method to calculate some difficult figures and how to choose the best location. Only depend on my enthusiasm for urban planning. So I decide to make some questions to ask the people that would read my research or benefit from it.

Inspiration:

1. Although I am not a professional urban designer, but I believe an urban planner's real task is to make people feel comfortable and convenient to some extent. So, if most citizens think it's a good idea. At least, this tells me my suggestions are not so bad.

2. I want to find out if my logic is matches that of my citizens. This time, my role is not of a normal citizen, I am an Urban Planner. Sometimes, I stand in an Urban Planner's position to think of things. But, I guess, the most important thing I have to do is understand what the other citizens are thinking and integrating their thoughts into my suggestions in a practical way. A good planner has such charisma to balance the theory and realism.

3. I have the answer to the questionnaires from citizens, my project would be more credible and my government would consider my suggestion more seriously. If that happens, then I have a greater possibility to make my dream come true.

4. I want to give our citizen a sense of belonging. They can feel the their own city cares for them a lot.. This is our hometown, they have responsibility to give new ideas and the government would even look at. In China, City Planner is a very cold job. Most people think they just drink and play games in the offices. I want them to know their City Planner are real people who can help them and is willing to stand in their position and demand higher standards. Just like me, they hate corruption too.

5. This is one of my personal achievements and my first attempt at Urban Planning but I want to it to be a complete one. I want my proposal to include feedback and results from our citizens as well as governments.

Purpose
1. Citizen's attitude of my proposed stop.
2. Concluding the participation rate.
3. Find out people's attitude towards Urban Planners.

Settings
- **Affected Citizens**: ones that use subway (line 1, line 2, line 3 and line 9)
- **Method**: Advertisement in the newspaper – readers respond my sending email
- **Questions**: 10
- **Title**: Make Public Transport Better
- **Type of question**: Yes / No
- **Reward**: 1% people who write can get a free subway card

1. Do you like China?

Yes / No

(The first question can attract many people's attention. They think this questionnaire is not an advertisement or academic research. When it is something about their own country, they get involved.)

2. Do you hate Chinese public transport?

Yes / No

(We can know people's attitude towards public transport, in general. I want to understand citizens think in recent times.)

3. Is the SUBWAY the most common way you travel?

Yes / No

(Want to see if these people even care about what happens to the subway and its future?.)

4. Are you more familiar with the Cao Zhuang Ecological Area than the Aeon shopping mall?

Yes / No

(This is related to my proposed stop#2, if they all familiar with Caozhuang, it means I am right.)

5. Among the two places above which do you think you would travel to more often?

Yes / No

(The same purpose with the #4 question. Just asking them more directly.)

6. When you get off of the Qin Jian Road stop, do you go to Taxation school?

Yes / No

(If only a few people go there, what's the meaning of there being a subway stop there?)

7. If the subway stop is 2 kilometers far away from your destination, will you still by subway?

Yes / No

(Due to the 2 kilometers, I want to know people whether choose another type of transports.)

8. Do you like Urban Planners?

Yes / No

(I want to understand people's opinion about my career.)

9. If Urban Planner's main task is to improve your public life, would you like them then?

Yes / No

(If people truly understand what the main goal of my job is, then will they support us?)

10. Do you want a free subway card?

Yes / No

(Just a joke, cheering up the busy people, making them feel warmer and giving them some cheerfulness to face the cold winter.)