

**THI Asia**  
**鼎漢亞洲**

**THI Asia**  
**Consultants**  
**Limited**

303, 3/F Sam Cheong Building  
216-220 Des Voeux Road Central, Hong Kong  
Tel : (852) 24123938  
Fax : (852) 2899 2176

9 June 2015

The Directors  
China Merchants Holdings (Pacific) Limited

Dear Sirs,

### **Traffic and Revenue Forecast Study for Guixing Expressway**

In accordance with your instructions and for China Merchants Holdings (Pacific) Limited (the “Company”), THI Asia Consultants Limited (the “Consultant” or “THI”) has conducted an independent traffic and revenue study (the “Study”) of Guixing Expressway (hereafter referred as the “Expressway”). The Expressway is a four-lane carriageway (Dual-2) located at the east-northern area of Guilin Municipality (桂林市) connecting Guilin urban area with Xingan County (兴安县) in the east-northern of Guangxi Province (广西省). This report summarizes the results and findings based on the technical analyses conducted. We confirm that the future traffic and revenue for the remainder of the concession period (2015 to 2043) for the Expressway are projected in an independent and professional manner.

The results of our analysis are presented in the report of “Guixing Expressway Traffic and Revenue Forecast Study Report”. A brief summary of our study approaches and findings is presented below:

#### **E1. INTRODUCTION**

This report summarizes the results and findings based on the technical analyses conducted. In conducting the Study, we have based our analyses on site investigation, interviews with local authorities/toll road operator, and reviews of available traffic data, feasibility reports, Origin-Destination (“O-D”) surveys and other relevant information. In utilizing the given information from the Company, we have sought confirmation from the management of the toll roads that no material factors have been omitted. We concluded that sufficient and reliable information has been provided for conclusive review and comprehensive analysis.

The Expressway with a total length of 53.4 Km is part of the G72 China’s National Expressway System connecting Quanzhou Municipality (泉州) of Fujing Province (福建省) and Nanning Municipality (南宁) of Guangxi Province (广西省) serving the north-south traffic demand. This Expressway is the key link serving both local and external traffic demand.

#### **E2. OBJECTIVES AND SCOPE OF SERVICES**

The technical objective of the Study is to provide the Company with an independent study on future traffic and revenue projections. The scope of work includes data inventory and collection, traffic analysis and future traffic and revenue projections. Major activities include:

- Review available planning and feasibility reports related to the traffic corridors of the study expressway ;
- Collect and review socio-economic data of the study region;

- Collect and analyze traffic and revenue data;
- Conduct additional traffic surveys and counts where applicable;
- Interview toll road operators and local planning department officials;
- Formulate travel demand forecast methodology;
- Analyze possible impact of competing roads in the traffic corridors under study; and
- Prepare traffic and revenue forecasts.

### **E3. TRAFFIC FORECASTING METHODOLOGY**

The traffic forecasts are based on conventional travel demand forecast methodologies widely adopted for toll road studies and have been applied to similar toll roads in the People's Republic of China ("PRC"). Relevant information collected and accumulated by THI in other projects in Guangxi Province as well as Guangdong Province areas in PRC have also been incorporated in this study. The traffic forecasting methodology for the Study consists of the following stages:

- a) Data Inventory and Review - The key objective for this technical stage is to obtain existing available information and organize them for the next stage of work. Typical information to be inventoried includes historic highway network data, O-D data, toll road traffic and revenue data, existing and future socio-economic forecasts of the relevant region, and previous analyses and reports.
- b) Define Technical Approach - The goal is to develop the most appropriate technical methodology to be used for study purposes. The determination of the types of method depends on the availability and quality of the data as well as the overall project programme.
- c) Travel Demand Forecasting - Based on the information and findings from previous stages, this stage defines and analyzes the existing traffic patterns and forecasts the future travel demand based on the appropriate key traffic variables that include:
  - Economic indicators and growth in travel demand;
  - Physical conditions of the road and its carrying capacity;
  - Vehicle classifications and percentage distribution; and
  - O-D patterns by class of vehicle.

To consider the uncertainty of various external factors in the future, the traffic forecasts are presented under two scenarios: the Conservative Scenario and the Optimistic Scenario.

### **E4. PRINCIPAL MODEL / ANALYTICAL ASSUMPTIONS**

The general assumptions defined in the Study are as follows:

- a) The use of "Gross Domestic Product" ("GDP") statistics as the prime indicator to determine future traffic growth of the highway under study. Past studies conducted in the study region and in other areas of PRC have indicated that growth in GDP is more compatible and correlated with the passenger and goods vehicles travels than any other factors or available parameters. Because the majority of the anticipated future travel will be associated with the movement of passenger and goods in the region, GDP growth will be used as the key parameter for future forecasts.

- b) O-D patterns identified from the available database are applicable to the subject analysis;
- c) The most current traffic composition of existing traffic flow is assumed to be applicable to the forecasts;
- d) Variations between existing and future travel behaviors, system patterns and trip making decisions are insignificant;
- e) Future economic growth trends in the study region should be consistent with existing regional economic policies, the provincial development master plan and local governmental policies. The adopted conservative economic growths are given in the table below;

Annual GDP Growth (%) Assumptions (Conservative)

Year	Guangxi Province	Guilin	Liuzhou
2015	9.8%	9.0%	10.4%
2016-2020	8.8%	8.1%	9.4%
2021-2025	8.4%	7.7%	8.9%
2026-2030	7.9%	7.3%	8.4%
2031-2035	7.5%	6.9%	8.0%
2036-2040	7.2%	6.6%	7.6%
2041-2045	6.8%	6.3%	7.2%

- f) Technical parameters associated with the determination of facility capacity are within the practical range;
- g) Technical data obtained and used for the analysis is accurate and reliable, and therefore is a good representation of the typical average condition;
- h) Based on the Highway Capacity Manual and professional judgment, the estimated facility-based sectional capacity for the highways under study is 62,000 vehicles per day. This Sectional Capacities are defined as the maximum number of vehicles that can be accommodated by Expressway road section of facilities per day;
- i) Major new highway links are planned or under construction in the vicinity of the study corridors. The major new links and the expected opening year in the study area are:
  - Year 2016 - Xinglong Expressway (兴龙高速公路)
  - Year 2017 - Yanglu Expressway (阳鹿高速公路)
  - Year 2017 - Guisan Expressway (桂三高速公路)
  - Year 2017 - Xixing Expressway (资兴高速公路)
  - Year 2017 - National Highway G321 expansion (国道 G321)
  - Year 2018 - Liuwu Expressway (柳梧高速公路)
  - Year 2019 - Liyu Expressway (荔玉高速公路)
  - Year 2020 - Guanping Expressway (灌平高速公路)
- j) Future year traffic demand of Conservative and Optimistic Scenarios are formed by applying the assumed GDP growths to the traffic demand elasticity indices and adjusted

by area. The resultant growths for Conservative and Optimistic Scenarios are given in table below.

Study Area Passenger and Goods Vehicles Traffic Growth (%)

Year	Conservative		Optimistic	
	Passenger Vehicle	Goods Vehicle	Passenger Vehicle	Goods Vehicle
2015	4.77%	10.48%	5.25%	11.53%
2016-2020	4.30%	9.43%	4.73%	10.37%
2021-2025	4.08%	8.96%	4.49%	9.85%
2026-2030	3.88%	8.51%	4.27%	9.36%
2031-2035	3.68%	8.09%	4.05%	8.89%
2036-2040	3.50%	7.68%	3.85%	8.45%
2041-2045	3.32%	7.30%	3.66%	8.03%

- k) Non-toll vehicles are also considered in this study. Non-toll vehicles include officially toll exempted vehicles such as government vehicles and toll road company cars. The proportion of non-toll vehicles is derived from the actual traffic flows.

#### E5. SUMMARY OF TRAFFIC PROJECTIONS

Traffic forecasts are performed for the following 6 vehicles classes and Non-toll vehicles. The definition of vehicle class is given in Table below:

Vehicle Class	Passenger Vehicle	Goods Vehicle
Class 1	Passenger vehicles $\leq 7$ seats	Goods vehicles $\leq 2$ tons
Class 2	Passenger vehicles 8 -19 seats	Goods vehicles 2 tons $< \& \leq 5$ tons
Class 3	Passenger vehicles 20-39 seats	Goods vehicles 5 tons $< \& \leq 10$ tons, 20' Container Vehicle
Class 4	Passenger vehicles $>40$ seats	Goods vehicles 10 tons $< \& \leq 15$ tons, 40' Container Vehicle
Class 5		Goods vehicles $> 15$ tones
Non-toll	Official Toll Exemption	

Average Daily Vehicle Forecasts – Conservative

Year	Passenger Vehicle				Goods Vehicle	Non- Toll	Total
	1	2	3	4			
2015	8009	58	246	750	6447	1960	17470
2016	10101	72	303	877	8043	2557	21953
2017	11747	84	352	1020	10744	2974	26921
2020	13966	100	418	1212	14722	3536	33955
2025	16356	117	490	1420	21719	4141	44243
2030	19725	141	591	1712	32584	4994	59748
2035	23636	169	708	2052	48066	5984	80616
2040	24424	175	732	2120	49047	6184	82682
2043	24431	175	732	2121	49062	6186	82706

Average Daily Vehicle Forecasts – Optimistic

Year	Passenger Vehicle				Goods Vehicle	Non- Toll	Total
	1	2	3	4			
2015	8242	60	253	772	6663	2017	18008
2016	10683	76	320	924	8547	2599	23149
2017	12726	91	381	1101	11837	3096	29232
2020	15454	111	462	1337	16781	3760	37905
2025	18313	131	548	1584	25605	4456	50636
2030	22501	161	673	1946	39945	5475	70701
2035	24610	176	736	2128	49754	5988	83393
2040	24622	176	737	2130	49804	5991	83459
2043	24630	176	737	2130	49834	5993	83499

**E6. TOLL RATE STRUCTURE**

Future revenues are estimated based on the projected traffic and the anticipated toll rates. The current toll rates include distance related (1) and Bridge (B) and Tunnel (T) Toll Rates (2) are given in Tables below. These toll rates apply to all toll stations. Toll levied at the Expressway are derived from the toll rates below:

Expressway Toll Rates (1)

Toll Rate Category	Vehicle Class	Toll Rate
By Vehicle Class RMB/Km	Class 1	0.50
	Class 2	0.80
	Class 3	1.20
	Class 4	1.44
	Class 5	1.68
By Weight	Goods Vehicle	0.08/Ton-Km
Non-toll	Official Toll Exemption	

Bridge (B) and Tunnel (T) Toll Rates (2)

Vehicle Class	Toll Rate	Before 1 Aug 2016			On and After 1 Aug 2016		
		Class 1 B/T	Class 2 B/T	Class 3 B/T	Class 1 B/T	Class 2 B/T	Class 3 B/T
Class 1	RMB/Exit	1.20	2.20	3.20	1.50	2.50	3.50
Class 2		2.40	4.40	6.40	3.00	5.00	7.00
Class 3		3.00	5.50	8.00	3.75	6.25	8.75
Class 4		3.60	6.60	9.60	4.50	7.50	10.50
Class 5		3.60	6.60	9.60	4.50	7.50	10.50
Goods Vehicle	RMB/Ton-Km	0.10			0.15		

The Class 1 Passenger Vehicle ( $\leq 7$  seats) is toll-free for the four major festival periods including Spring Festival, Qingming Festival, Labor Day Festival and National Day Festival. The approved total number of days for the four festivals is 20 days in year 2015.

For this study, the above toll levels are assumed to be increased by 15% for every seven years starting from year 2022. This increment represents an increase of about 2.0% per annum and is reasonable when compared to the average economic growth of more than 10% in the regions.

#### E7. ESTIMATION OF REVENUE

A summary of the revenue estimations for the Expressway under study is presented under two scenarios in the following tables.

Annual Revenue Forecast (RMB Million) – Conservative

Year	Passenger Vehicle				Goods Vehicle	Total
	1	2	3	4		
2015	62.7	0.7	5.2	22.5	111.3	202.4
2016	75.8	0.9	6.0	25.6	133.2	241.5
2017	88.1	1.0	7.0	29.7	178.0	303.9
2020	104.8	1.2	8.3	35.4	243.9	393.5
2025	141.1	1.6	11.2	47.6	413.7	615.3
2030	195.7	2.3	15.6	66.0	713.8	993.4
2035	234.5	2.7	18.7	79.1	1052.9	1387.9
2040	278.7	3.2	22.2	94.0	1235.6	1633.7
2043	320.6	3.7	25.5	108.2	1421.3	1879.3

Annual Revenue Forecast (RMB Million) – Optimistic

Year	Passenger Vehicle				Goods Vehicle	Total
	1	2	3	4		
2015	64.6	0.7	5.3	23.2	115.0	208.8
2016	80.0	0.9	6.4	26.9	141.3	255.4
2017	95.3	1.1	7.6	32.0	195.6	331.6
2020	115.7	1.3	9.2	38.9	277.4	442.5
2025	157.6	1.8	12.5	53.0	486.7	711.7
2030	222.8	2.6	17.7	74.9	873.1	1191.1
2035	243.6	2.8	19.4	82.0	1087.5	1435.3
2040	280.3	3.2	22.3	94.3	1251.9	1652.0
2043	322.5	3.7	25.6	108.5	1440.5	1900.8


**E8. CONCLUSION**

The Consultant concluded that the traffic forecasts developed by the above methodology and on the above assumptions are consistent with common professional practice and meet the objectives of the agreed scope of work with the Company. Full details of the Study and data are presented in the report of “Guixing Expressway Traffic and Revenue Forecast Study Report”.

Yours sincerely,  
For and on behalf of  
**THI Asia Consultants Limited**



**Richard Yau**  
Project Director



**Jessica Liang**  
Project Manager

**THI Asia**  
**鼎漢亞洲**

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9 June 2014

The Directors  
China Merchants Holdings (Pacific) Limited

Dear Sirs,

**Operation & Maintenance Cost Estimation Study for  
Guixing Expressway**

In accordance with your instructions and for China Merchants Holdings (Pacific) Limited (the “Company”), THI Asia Consultants Limited (also referred to as “Consultant” or “THI”) has conducted an independent assessment on the Operation and Maintenance (O&M) study (the “Study”) of the Guixing Expressway (hereafter referred as the “Expressway”). This report summarizes the results and findings based on the technical analyses conducted. We confirm that the future operation and maintenance for the Expressway are estimated in an independent and professional manner.

In conducting the Study, we have based our analyses on brief visual assessment on selected portions and elements of the Expressway; meetings with management of the Expressway operator and site staff available at the time of the site visits; reviews of available feasibility reports and other relevant information. In utilizing the given information provided by the Company, we have sought confirmation from the management of the Expressway that no material factors have been omitted. We concluded that sufficient and reliable information has been provided for conclusive review and comprehensive analysis.

The results of our analysis are presented in the “Guixing Expressway Maintenance Cost Estimation Study Report”. A brief summary of our study approaches and findings is presented below:

**E1. INTRODUCTION**

This operation and maintenance assessment consists of:

- Evaluation of the road conditions;



- Review and comment on the existing O&M Program, with respect to their adequacy and efficiency (cost); and
- Estimation of the future operation and maintenance costs for the remainder of the concession period (2015 to 2043) of the subject facility.

In accordance with the study objectives, scope and schedule, THI conducted a site visit on 11th March 2015 to perform: (a) brief visual assessment on selected portions and elements of the Expressway; and (b) meetings with Expressway Company (hereafter referred as “Operator”) and site staff available at the time of the site visits.

Please note that the scope of this study, however, is not to conduct a detailed inspection or a rigorous engineering analysis of the expressway, but rather, to provide a general overview of the project. The report is intended to give a review on the existing conditions of the expressway and the maintenance aspects in order that the risk, attributable cost and financial viability of the project can be assessed.

## **E2. TECHNICAL FINDINGS AND RECOMMENDATIONS**

The Expressway with a total length of 53.4 Km was designed for the classification of “Expressway” for Truck 20 – Trailer 120 loading with maximum design speed of 120kph respectively. All of the facilities were designed for “Flat/Light Rolling” topography.

During our investigation, we have retrieved some construction documents and O&M records for the facilities. According to the information we have reviewed, all of the facilities under study were designed in accordance with the “Highway Engineering Standard for “Flat/Light rolling” topography.

## **E3. OPERATION AND MAINTENANCE (O&M) COSTS**

The total annual O&M cost includes costs for minor repair/maintenance as well as medium and major repairs. Minor repairs and maintenance refers to the upkeep/preventative actions and minor repairing for normal operation of the highway to be maintained. Medium to major repairs are defined as the required periodical repairs in order to reinstate the original conditions of the highway after long term wear and tear.

The purpose of this study is to review the existing O&M program and to forms the basis in determining future maintenance needs in terms of cost and effort. Emphasis has been placed on major engineering elements and facility structures with the goal of matching the facility needs with the O&M program.

The maintenance of the Expressway is covered by the warranty contract until April 2015. Considering the Expressway had completed in 2013, the major maintenance should be carried out for every 7 years from year 2020/2021.

THI has reviewed and evaluated the estimated maintenance costs and the maintenance schedule of the study roads. We concluded that the cost per km for the minor and maintenance fee is reasonable based on the conditions of the expressway and the anticipated level of traffic.

Operation and Maintenance costs for the concession period (RMB million)

Year	2015	2016	2020	2021	2025	2030	2035	2040	2043
Cost	5.3	11.0	96.1	96.1	10.7	12.4	145.4	16.6	18.1

### **Management Costs**

The management costs include the salaries, staff costs and office administration costs. In view of the Operator has been operated from year 2013, the whole operation setup is well established, the management costs are therefore estimated on the basis of past and existing costs involved.

The future year's costs estimations are given in Table below:

Management costs for the concession period (RMB million)

Year	2015	2016	2020	2021	2025	2030	2035	2040	2043
Cost	16.2	17.7	20.4	21.0	23.6	27.4	31.7	36.8	40.2

**E4. CONCLUSION**

The Consultant concluded that the assessment on the operation and maintenance are consistent with common professional practice and meets the objectives of the agreed scope of work with the Company. Full details of the Study and data are presented in the “Guixing Expressway Operation & Maintenance Cost Estimation Study Report”.

Yours sincerely,

For and on behalf of

**THI Asia Consultants Limited**



**Richard Yau**  
**Executive Director**



**Jessica Liang**  
**Project Manager**

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9 June 2015

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Dear Sirs,

### **Traffic and Revenue Forecast Study for Guiyang Expressway**

In accordance with your instructions and for China Merchants Holdings (Pacific) Limited (the “Company”), THI Asia Consultants Limited (the “Consultant” or “THI”) has conducted an independent traffic and revenue study (the “Study”) of Guiyang Expressway (hereafter referred as the “Expressway”). The Expressway is a four-lane carriageway (Dual-2) located at the east-southern area of Guilin Municipality (桂林市) connecting Guilin urban area with Yangzhou County (阳朔县) in the east northern of Guangxi Province (广西省). This report summarizes the results and findings based on the technical analyses conducted. We confirm that the future traffic and revenue for the remainder of the concession period (2015 to 2038) for the Expressway are projected in an independent and professional manner.

The results of our analysis are presented in the report of “Guiyang Expressway Traffic and Revenue Forecast Study Report”. A brief summary of our study approaches and findings is presented below:

#### **E1. INTRODUCTION**

This report summarizes the results and findings based on the technical analyses conducted. In conducting the Study, we have based our analyses on site investigation, interviews with local authorities/toll road operator, and reviews of available traffic data, feasibility reports, Origin-Destination (“O-D”) surveys and other relevant information. In utilizing the given information from the Company, we have sought confirmation from the management of the toll roads that no material factors have been omitted. We concluded that sufficient and reliable information has been provided for conclusive review and comprehensive analysis.

The Expressway with a total length of 67.0 Km is part of the G65 China’s National Expressway System connecting Baotou Municipality (包头市) of Inner Mongolia (内蒙古) and Maoming Municipality (茂名) of Guangdong Province (广东省) serving the north-south traffic demand.

#### **E2. OBJECTIVES AND SCOPE OF SERVICES**

The technical objective of the Study is to provide the Company with an independent study on future traffic and revenue projections. The scope of work includes data inventory and collection, traffic analysis and future traffic and revenue projections. Major activities include:

- Review available planning and feasibility reports related to the traffic corridors of the study expressway ;
- Collect and review socio-economic data of the study region;

- Collect and analyze traffic and revenue data;
- Conduct additional traffic surveys and counts where applicable;
- Interview toll road operators and local planning department officials;
- Formulate travel demand forecast methodology;
- Analyze possible impact of competing roads in the traffic corridors under study; and
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The traffic forecasts are based on conventional travel demand forecast methodologies widely adopted for toll road studies and have been applied to similar toll roads in the People's Republic of China ("PRC"). Relevant information collected and accumulated by THI in other projects in Guangxi Province as well as Guangdong Province areas in PRC have also been incorporated in this study. The traffic forecasting methodology for the Study consists of the following stages:

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- b) Define Technical Approach - The goal is to develop the most appropriate technical methodology to be used for study purposes. The determination of the types of method depends on the availability and quality of the data as well as the overall project programme.
- c) Travel Demand Forecasting - Based on the information and findings from previous stages, this stage defines and analyzes the existing traffic patterns and forecasts the future travel demand based on the appropriate key traffic variables that include:
  - Economic indicators and growth in travel demand;
  - Physical conditions of the road and its carrying capacity;
  - Vehicle classifications and percentage distribution; and
  - O-D patterns by class of vehicle.

To consider the uncertainty of various external factors in the future, the traffic forecasts are presented under two scenarios: the Conservative Scenario and the Optimistic Scenario.

### E4. PRINCIPAL MODEL / ANALYTICAL ASSUMPTIONS

The general assumptions defined in the Study are as follows:

- a) The use of "Gross Domestic Product" ("GDP") statistics as the prime indicator to determine future traffic growth of the highway under study. Past studies conducted in the study region and in other areas of PRC have indicated that growth in GDP is more compatible and correlated with the passenger and goods vehicles travels than any other factors or available parameters. Because the majority of the anticipated future travel will be associated with the movement of passenger and goods in the region, GDP growth will be used as the key parameter for future forecasts.

- b) O-D patterns identified from the available database are applicable to the subject analysis;
- c) The most current traffic composition of existing traffic flow is assumed to be applicable to the forecasts;
- d) Variations between existing and future travel behaviors, system patterns and trip making decisions are insignificant;
- e) Future economic growth trends in the study region should be consistent with existing regional economic policies, the provincial development master plan and local governmental policies. The adopted conservative economic growths are given in the table below;

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- f) Technical parameters associated with the determination of facility capacity are within the practical range;
- g) Technical data obtained and used for the analysis is accurate and reliable, and therefore is a good representation of the typical average condition;
- h) Based on the Highway Capacity Manual and professional judgment, the estimated facility-based sectional capacity for the highways under study is 62,000 vehicles per day. This Sectional Capacities are defined as the maximum number of vehicles that can be accommodated by Expressway road section of facilities per day;
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  - Year 2020 - Guanping Expressway (灌平高速公路)
- j) Future year traffic demand of Conservative and Optimistic Scenarios are formed by applying the assumed GDP growths to the traffic demand elasticity indices and adjusted

by area. The resultant growths for Conservative and Optimistic Scenarios are given in table below.

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2031-2035	3.68%	8.09%	4.05%	8.89%
2036-2040	3.50%	7.68%	3.85%	8.45%

- k) Non-toll vehicles are also considered in this study. Non-toll vehicles include officially toll exempted vehicles such as government vehicles and toll road company cars. The proportion of non-toll vehicles is derived from the actual traffic flows.

## E5. SUMMARY OF TRAFFIC PROJECTIONS

Traffic forecasts are performed for the following 6 vehicles classes and Non-toll vehicles. The definition of vehicle class is given in Table below:

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Class 4	Passenger vehicles $>40$ seats	Goods vehicles 10 tons $< \& \leq 15$ tons, 40' Container Vehicle
Class 5		Goods vehicles $> 15$ tones
Non-toll	Official Toll Exemption	

Average Daily Vehicle Forecasts – Conservative

Year	Passenger Vehicle				Goods Vehicle	Non- Toll	Total
	1	2	3	4			
2015	13580	116	783	771	3528	1561	20339
2016	14571	125	840	827	3966	1675	22004
2017	16873	144	972	958	6235	1939	27122
2020	25438	218	1466	1444	10724	2924	42213
2025	30386	260	1751	1725	16423	3493	54038
2030	36646	314	2112	2081	24639	4212	70003
2035	43912	376	2530	2493	36346	5047	90704
2038	46681	400	2690	2650	41764	5365	99550

Average Daily Vehicle Forecasts – Optimistic

Year	Passenger Vehicle				Goods Vehicle	Non- Toll	Total
	1	2	3	4			
2015	13922	119	802	790	3633	1600	20866
2016	15081	129	869	856	4140	1733	22809
2017	17875	153	1030	1015	6683	2055	28810
2020	28706	246	1654	1630	12367	3299	47902
2025	34834	298	2007	1978	19302	4004	62422
2030	42800	366	2466	2430	30111	4919	83094
2035	47275	405	2724	2684	41611	5434	100133
2038	47290	405	2725	2685	41777	5435	100317

**E6. TOLL RATE STRUCTURE**

Future revenues are estimated based on the projected traffic and the anticipated toll rates. The current toll rates are given in Table below. These toll rates apply to all toll stations. Toll levied at the Expressway are derived from the toll rates below:

Expressway Toll Rates

Toll Rate Category	Vehicle Class	Toll Rate
By Vehicle Class RMB/Km	Class 1	0.50
	Class 2	0.80
	Class 3	1.20
	Class 4	1.44
	Class 5	1.68
By Weight	Goods Vehicle	0.08/Ton-Km
Non-toll	Official Toll Exemption	

The Class 1 Passenger Vehicle ( $\leq 7$  seats) is toll-free for the four major festival periods including Spring Festival, Qingming Festival, Labor Day Festival and National Day Festival. The approved total number of days for the four festivals is 20 days in year 2015.



For this study, the above toll levels are assumed to be increased by 15% for every seven years starting from year 2022. This increment represents an increase of about 2.0% per annum and is reasonable when compared to the average economic growth of more than 10% in the regions.

## E7. ESTIMATION OF REVENUE

A summary of the revenue estimations for the Expressway under study is presented under two scenarios in the following tables.

Annual Revenue Forecast (RMB Million) – Conservative

Year	Passenger Vehicle				Goods Vehicle	Total
	1	2	3	4		
2015	94.6	1.5	14.1	16.5	35.6	162.3
2016	101.5	1.6	15.1	17.7	40.1	176.0
2017	117.6	1.9	17.5	20.5	63.0	220.4
2020	177.2	2.8	26.3	30.9	108.3	345.6
2025	243.5	3.9	36.2	42.5	190.7	516.7
2030	337.7	5.4	50.2	58.9	329.1	781.2
2035	404.6	6.5	60.1	70.6	485.5	1027.2
2038	494.6	7.9	73.5	86.3	641.5	1303.8

Annual Revenue Forecast (RMB Million) – Optimistic

Year	Passenger Vehicle				Goods Vehicle	Total
	1	2	3	4		
2015	97.0	1.5	14.4	16.9	36.7	166.6
2016	105.1	1.7	15.6	18.3	41.8	182.5
2017	124.5	2.0	18.5	21.7	67.5	234.2
2020	200.0	3.2	29.7	34.9	124.9	392.7
2025	279.1	4.5	41.5	48.7	224.2	597.9
2030	394.4	6.3	58.6	68.8	402.2	930.2
2035	435.6	6.9	64.7	76.0	555.8	1139.0
2038	501.1	8.0	74.5	87.4	641.7	1312.6

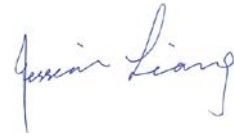
## E8. CONCLUSION

The Consultant concluded that the traffic forecasts developed by the above methodology and on the above assumptions are consistent with common professional practice and meet the objectives of the agreed scope of work with the Company. Full details of the Study and data are presented in the report of “Guiyang Expressway Traffic and Revenue Forecast Study Report”.

Yours sincerely,  
For and on behalf of  
**THI Asia Consultants Limited**

A handwritten signature in blue ink, appearing to read 'Richard Yau', written in a cursive style.

**Richard Yau**  
**Project Director**

A handwritten signature in blue ink, appearing to read 'Jessica Liang', written in a cursive style.

**Jessica Liang**  
**Project Manager**

**THI Asia**  
**鼎漢亞洲**

**THI Asia  
Consultants  
Limited**

**303, 3/F Sam Cheong Building  
216-220 Des Voeux Road Central, Hong Kong  
Tel : (852) 24123938  
Fax : (852) 2899 2176**

9 June 2014

The Directors  
China Merchants Holdings (Pacific) Limited

Dear Sirs,

### **Operation & Maintenance Cost Estimation Study for Guiyang Expressway**

In accordance with your instructions and for China Merchants Holdings (Pacific) Limited (the “Company”), THI Asia Consultants Limited (also referred to as “Consultant” or “THI”) has conducted an independent assessment on the Operation and Maintenance (O&M) study (the “Study”) of the Guiyang Expressway (hereafter referred as the “Expressway”). This report summarizes the results and findings based on the technical analyses conducted. We confirm that the future operation and maintenance for the Expressway are estimated in an independent and professional manner.

In conducting the Study, we have based our analyses on brief visual assessment on selected portions and elements of the Expressway; meetings with management of the Expressway operator and site staff available at the time of the site visits; reviews of available feasibility reports and other relevant information. In utilizing the given information provided by the Company, we have sought confirmation from the management of the Expressway that no material factors have been omitted. We concluded that sufficient and reliable information has been provided for conclusive review and comprehensive analysis.

The results of our analysis are presented in the “Guiyang Expressway Maintenance Cost Estimation Study Report”. A brief summary of our study approaches and findings is presented below:

#### **E1. INTRODUCTION**

This operation and maintenance assessment consists of:

- Evaluation of the road conditions;

- Review and comment on the existing O&M Program, with respect to their adequacy and efficiency (cost); and
- Estimation of the future operation and maintenance costs for the remainder of the concession period (2015 to 2038) of the subject facility.

In accordance with the study objectives, scope and schedule, THI conducted a site visit on 11th March 2015 to perform: (a) brief visual assessment on selected portions and elements of the Expressway; and (b) meetings with Expressway Company (hereafter referred as “Operator”) and site staff available at the time of the site visits.

Please note that the scope of this study, however, is not to conduct a detailed inspection or a rigorous engineering analysis of the expressway, but rather, to provide a general overview of the project. The report is intended to give a review on the existing conditions of the expressway and the maintenance aspects in order that the risk, attributable cost and financial viability of the project can be assessed.

## **E2. TECHNICAL FINDINGS AND RECOMMENDATIONS**

The Expressway with a total length of 67.0 Km was designed for the classification of “Expressway” for Truck 20 – Trailer 120 loading with maximum design speed of 120kph respectively. All of the facilities were designed for “Flat/Light Rolling” topography.

During our investigation, we have retrieved some construction documents and O&M records for the facilities. According to the information we have reviewed, all of the facilities under study were designed in accordance with the “Highway Engineering Standard for “Flat/Light rolling” topography.

## **E3. OPERATION AND MAINTENANCE (O&M) COSTS**

The total annual O&M cost includes costs for minor repair/maintenance as well as medium and major repairs. Minor repairs and maintenance refers to the upkeep/preventative actions and minor repairing for normal operation of the highway to be maintained. Medium to major repairs are defined as the required periodical repairs in order to reinstate the original conditions of the highway after long term wear and tear.

The purpose of this study is to review the existing O&M program and to forms the basis in determining future maintenance needs in terms of cost and effort. Emphasis has been

placed on major engineering elements and facility structures with the goal of matching the facility needs with the O&M program.

Considering the Expressway had completed in 2008, the major maintenance should be carried out for every 7 years from year 2019/2020.

THI has reviewed and evaluated the estimated maintenance costs and the maintenance schedule of the study roads. We concluded that the cost per km for the minor and maintenance fee is reasonable based on the conditions of the expressway and the anticipated level of traffic.

Operation and Maintenance costs for the concession period (RMB million)

Year	2015	2016	2019	2020	2025	2030	2035	2038
Cost	5.1	6.2	93.3	93.3	9.6	11.2	12.9	14.1

### **Management Costs**

The management costs include the salaries, staff costs and office administration costs. In view of the Operator has been operated from year 2008, the whole operation setup is well established and there will be no new toll plaza to be built in the foreseeable future, the management costs are therefore estimated on the basis of past and existing costs involved.

The future year's costs estimations are given in Table below:

Management costs for the concession period (RMB million)

Year	2015	2016	2019	2020	2025	2030	2035	2038
Cost	16.1	16.8	18.5	19.1	22.1	25.6	29.7	32.5

**E4. CONCLUSION**

The Consultant concluded that the assessment on the operation and maintenance are consistent with common professional practice and meets the objectives of the agreed scope of work with the Company. Full details of the Study and data are presented in the “Guiyang Expressway Operation & Maintenance Cost Estimation Study Report”.

Yours sincerely,

For and on behalf of

**THI Asia Consultants Limited**



**Richard Yau**  
**Executive Director**



**Jessica Liang**  
**Project Manager**

**THI Asia**  
**鼎漢亞洲**

**THI Asia**  
**Consultants**  
**Limited**

**303, 3/F Sam Cheong Building**  
**216-220 Des Voeux Road Central, Hong Kong**  
**Tel : (852) 24123938**  
**Fax : (852) 2899 2176**

9 June 2015

The Directors  
China Merchants Holdings (Pacific) Limited

Dear Sirs,

**Traffic and Revenue Forecast Study for  
Yangping Expressway**

In accordance with your instructions and for China Merchants Holdings (Pacific) Limited (the “Company”), THI Asia Consultants Limited (the “Consultant” or “THI”) has conducted an independent traffic and revenue study (the “Study”) of Yangping Expressway (hereafter referred as the “Expressway”). The Expressway is a four-lane carriageway (Dual-2) located at the east-southern area of Guilin Municipality (桂林市) connecting Yangzhou County (阳朔县) with Pingle County (平乐县) in the east northern of Guangxi Province (广西省). This report summarizes the results and findings based on the technical analyses conducted. We confirm that the future traffic and revenue for the remainder of the concession period (2015 to 2038) for the Expressway are projected in an independent and professional manner.

The results of our analysis are presented in the report of “Yangping Expressway Traffic and Revenue Forecast Study Report”. A brief summary of our study approaches and findings is presented below:

**E1. INTRODUCTION**

This report summarizes the results and findings based on the technical analyses conducted. In conducting the Study, we have based our analyses on site investigation, interviews with local authorities/toll road operator, and reviews of available traffic data, feasibility reports, Origin-Destination (“O-D”) surveys and other relevant information. In utilizing the given information from the Company, we have sought confirmation from the management of the toll roads that no material factors have been omitted. We concluded that sufficient and reliable information has been provided for conclusive review and comprehensive analysis.

The Expressway with a total length of 39.52 Km is part of the G65 China’s National Expressway System connecting Baotou Municipality (包头市) of Inner Mongolia (内蒙古) and Maoming Municipality (茂名) of Guangdong Province (广东省) serving the north-south traffic demand.

**E2. OBJECTIVES AND SCOPE OF SERVICES**

The technical objective of the Study is to provide the Company with an independent study on future traffic and revenue projections. The scope of work includes data inventory and collection, traffic analysis and future traffic and revenue projections. Major activities include:

- Review available planning and feasibility reports related to the traffic corridors of the study expressway ;

- Collect and review socio-economic data of the study region;
- Collect and analyze traffic and revenue data;
- Conduct additional traffic surveys and counts where applicable;
- Interview toll road operators and local planning department officials;
- Formulate travel demand forecast methodology;
- Analyze possible impact of competing roads in the traffic corridors under study; and
- Prepare traffic and revenue forecasts.

### **E3. TRAFFIC FORECASTING METHODOLOGY**

The traffic forecasts are based on conventional travel demand forecast methodologies widely adopted for toll road studies and have been applied to similar toll roads in the People's Republic of China ("PRC"). Relevant information collected and accumulated by THI in other projects in Guangxi Province as well as Guangdong Province areas in PRC have also been incorporated in this study. The traffic forecasting methodology for the Study consists of the following stages:

- a) Data Inventory and Review - The key objective for this technical stage is to obtain existing available information and organize them for the next stage of work. Typical information to be inventoried includes historic highway network data, O-D data, toll road traffic and revenue data, existing and future socio-economic forecasts of the relevant region, and previous analyses and reports.
- b) Define Technical Approach - The goal is to develop the most appropriate technical methodology to be used for study purposes. The determination of the types of method depends on the availability and quality of the data as well as the overall project programme.
- c) Travel Demand Forecasting - Based on the information and findings from previous stages, this stage defines and analyzes the existing traffic patterns and forecasts the future travel demand based on the appropriate key traffic variables that include:
  - Economic indicators and growth in travel demand;
  - Physical conditions of the road and its carrying capacity;
  - Vehicle classifications and percentage distribution; and
  - O-D patterns by class of vehicle.

To consider the uncertainty of various external factors in the future, the traffic forecasts are presented under two scenarios: the Conservative Scenario and the Optimistic Scenario.

### **E4. PRINCIPAL MODEL / ANALYTICAL ASSUMPTIONS**

The general assumptions defined in the Study are as follows:

- a) The use of "Gross Domestic Product" ("GDP") statistics as the prime indicator to determine future traffic growth of the highway under study. Past studies conducted in the study region and in other areas of PRC have indicated that growth in GDP is more compatible and correlated with the passenger and goods vehicles travels than any other factors or available parameters. Because the majority of the anticipated future travel will be associated with the movement of passenger and goods in the region, GDP growth will be used as the key parameter for future forecasts.



- b) O-D patterns identified from the available database are applicable to the subject analysis;
- c) The most current traffic composition of existing traffic flow is assumed to be applicable to the forecasts;
- d) Variations between existing and future travel behaviors, system patterns and trip making decisions are insignificant;
- e) Future economic growth trends in the study region should be consistent with existing regional economic policies, the provincial development master plan and local governmental policies. The adopted conservative economic growths are given in the table below;

Annual GDP Growth (%) Assumptions (Conservative)

Year	Guangxi Province	Guilin	Liuzhou
2015	9.8%	9.0%	10.4%
2016-2020	8.8%	8.1%	9.4%
2021-2025	8.4%	7.7%	8.9%
2026-2030	7.9%	7.3%	8.4%
2031-2035	7.5%	6.9%	8.0%
2036-2040	7.2%	6.6%	7.6%

- f) Technical parameters associated with the determination of facility capacity are within the practical range;
- g) Technical data obtained and used for the analysis is accurate and reliable, and therefore is a good representation of the typical average condition;
- h) Based on the Highway Capacity Manual and professional judgment, the estimated facility-based sectional capacity for the highways under study is 62,000 vehicles per day. This Sectional Capacities are defined as the maximum number of vehicles that can be accommodated by Expressway road section of facilities per day;
- i) Major new highway links are planned or under construction in the vicinity of the study corridors. The major new links and the expected opening year in the study area are:
  - Year 2016 - Xinglong Expressway (兴龙高速公路)
  - Year 2017 - Yanglu Expressway (阳鹿高速公路)
  - Year 2017 - Guisan Expressway (桂三高速公路)
  - Year 2017 - Xixing Expressway (资兴高速公路)
  - Year 2017 - National Highway G321 expansion (国道 G321)
  - Year 2018 - Liuwu Expressway (柳梧高速公路)
  - Year 2019 - Liyu Expressway (荔玉高速公路)
  - Year 2020 - Guanping Expressway (灌平高速公路)
- j) Future year traffic demand of Conservative and Optimistic Scenarios are formed by applying the assumed GDP growths to the traffic demand elasticity indices and adjusted

by area. The resultant growths for Conservative and Optimistic Scenarios are given in table below.

Study Area Passenger and Goods Vehicles Traffic Growth (%)

Year	Conservative		Optimistic	
	Passenger Vehicle	Goods Vehicle	Passenger Vehicle	Goods Vehicle
2015	4.77%	10.48%	5.25%	11.53%
2016-2020	4.30%	9.43%	4.73%	10.37%
2021-2025	4.08%	8.96%	4.49%	9.85%
2026-2030	3.88%	8.51%	4.27%	9.36%
2031-2035	3.68%	8.09%	4.05%	8.89%
2036-2040	3.50%	7.68%	3.85%	8.45%

- k) Non-toll vehicles are also considered in this study. Non-toll vehicles include officially toll exempted vehicles such as government vehicles and toll road company cars. The proportion of non-toll vehicles is derived from the actual traffic flows.

## E5. SUMMARY OF TRAFFIC PROJECTIONS

Traffic forecasts are performed for the following 6 vehicles classes and Non-toll vehicles. The definition of vehicle class is given in Table below:

Vehicle Class	Passenger Vehicle	Goods Vehicle
Class 1	Passenger vehicles $\leq 7$ seats	Goods vehicles $\leq 2$ tons
Class 2	Passenger vehicles 8 -19 seats	Goods vehicles 2 tons $< \& \leq 5$ tons
Class 3	Passenger vehicles 20-39 seats	Goods vehicles 5 tons $< \& \leq 10$ tons, 20' Container Vehicle
Class 4	Passenger vehicles $>40$ seats	Goods vehicles 10 tons $< \& \leq 15$ tons, 40' Container Vehicle
Class 5		Goods vehicles $> 15$ tones
Non-toll	Official Toll Exemption	

Average Daily Vehicle Forecasts – Conservative

Year	Passenger Vehicle				Goods Vehicle	Non- Toll	Total
	1	2	3	4			
2015	5164	51	282	622	1965	216	8299
2016	5644	55	308	680	2248	236	9172
2017	7156	70	391	862	2966	299	11745
2020	11763	115	642	1417	5542	492	19972
2025	17492	172	955	2108	10279	731	31738
2030	21096	207	1152	2542	15422	882	41301
2035	25278	248	1381	3046	22749	1057	53759
2038	27945	274	1526	3367	28325	1168	62606

Average Daily Vehicle Forecasts – Optimistic

Year	Passenger Vehicle				Goods Vehicle	Non- Toll	Total
	1	2	3	4			
2015	5362	53	293	646	2047	224	8626
2016	5938	58	324	715	2383	248	9667
2017	7821	77	427	942	3273	327	12868
2020	13889	136	759	1674	6669	581	23707
2025	21807	214	1191	2628	13313	912	40065
2030	26794	263	1463	3229	20769	1120	53639
2035	32681	321	1785	3938	31800	1367	71891
2038	33668	330	1839	4057	33397	1408	74699

**E6. TOLL RATE STRUCTURE**

Future revenues are estimated based on the projected traffic and the anticipated toll rates. The current toll rates include distance related (1) and Bridge (B) and Tunnel (T) Toll Rates (2) are given in Tables below. These toll rates apply to all toll stations. Toll levied at the Expressway are derived from the toll rates below:

Expressway Toll Rates(1)

Toll Rate Category	Vehicle Class	Toll Rate
By Vehicle Class RMB/Km	Class 1	0.50
	Class 2	0.80
	Class 3	1.20
	Class 4	1.44
	Class 5	1.68
By Weight	Goods Vehicle	0.08/Ton-Km
Non-toll	Official Toll Exemption	

## Bridge (B) and Tunnel (T) Toll Rate (2)

Vehicle Class	Toll Rate	Before 1 Aug 2016			On and After 1 Aug 2016		
		Class 1	Class 2	Class 3	Class 1	Class 2	Class 3
		B/T	B/T	B/T	B/T	B/T	B/T
Class 1	RMB/Exit	1.20	2.20	3.20	1.50	2.50	3.50
Class 2		2.40	4.40	6.40	3.00	5.00	7.00
Class 3		3.00	5.50	8.00	3.75	6.25	8.75
Class 4		3.60	6.60	9.60	4.50	7.50	10.50
Class 5		3.60	6.60	9.60	4.50	7.50	10.50
Goods Vehicle	RMB/Ton-Km	0.10			0.15		

The Class 1 Passenger Vehicle ( $\leq 7$  seats) is toll-free for the four major festival periods including Spring Festival, Qingming Festival, Labor Day Festival and National Day Festival. The approved total number of days for the four festivals is 20 days in year 2015.

For this study, the above toll levels are assumed to be increased by 15% for every seven years starting from year 2022. This increment represents an increase of about 2.0% per annum and is reasonable when compared to the average economic growth of more than 10% in the regions.

**E7. ESTIMATION OF REVENUE**

A summary of the revenue estimations for the Expressway under study is presented under two scenarios in the following tables.

## Annual Revenue Forecast (RMB Million) – Conservative

Year	Passenger Vehicle				Goods Vehicle	Total
	1	2	3	4		
2015	36.8	0.7	5.2	15.3	29.0	87.1
2016	40.3	0.8	5.6	16.7	33.2	96.7
2017	51.1	1.0	7.2	21.2	43.8	124.3
2020	70.5	1.4	9.9	29.3	68.8	179.8
2025	120.6	2.3	16.9	50.1	146.7	336.6
2030	167.2	3.2	23.5	69.5	253.1	516.5
2035	200.4	3.9	28.1	83.3	373.3	689.0
2038	254.7	4.9	35.7	105.9	534.6	935.9

Annual Revenue Forecast (RMB Million) – Optimistic

Year	Passenger Vehicle				Goods Vehicle	Total
	1	2	3	4		
2015	38.3	0.7	5.4	15.9	30.2	90.5
2016	42.4	0.8	5.9	17.6	35.2	101.9
2017	55.8	1.1	7.8	23.2	48.4	136.3
2020	79.3	1.5	11.1	33.0	78.8	203.7
2025	143.1	2.8	20.1	59.5	180.9	406.5
2030	202.3	3.9	28.4	84.1	324.6	643.3
2035	246.7	4.8	34.6	102.6	497.0	885.7
2038	292.3	5.7	41.0	121.5	600.3	1060.8

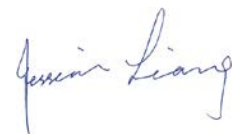
**E8. CONCLUSION**

The Consultant concluded that the traffic forecasts developed by the above methodology and on the above assumptions are consistent with common professional practice and meet the objectives of the agreed scope of work with the Company. Full details of the Study and data are presented in the report of “Yangping Expressway Traffic and Revenue Forecast Study Report”.

Yours sincerely,  
For and on behalf of  
**THI Asia Consultants Limited**



**Richard Yau**  
Project Director



**Jessica Liang**  
Project Manager

**THI Asia**  
**鼎漢亞洲**

**THI Asia  
Consultants  
Limited**

**303, 3/F Sam Cheong Building  
216-220 Des Voeux Road Central, Hong Kong  
Tel : (852) 24123938  
Fax : (852) 2899 2176**

9 June 2014

The Directors  
China Merchants Holdings (Pacific) Limited

Dear Sirs,

### **Operation & Maintenance Cost Estimation Study for Yangping Expressway**

In accordance with your instructions and for China Merchants Holdings (Pacific) Limited (the “Company”), THI Asia Consultants Limited (also referred to as “Consultant” or “THI”) has conducted an independent assessment on the Operation and Maintenance (O&M) study (the “Study”) of the Yangping Expressway (hereafter referred as the “Expressway”). This report summarizes the results and findings based on the technical analyses conducted. We confirm that the future operation and maintenance for the Expressway are estimated in an independent and professional manner.

In conducting the Study, we have based our analyses on brief visual assessment on selected portions and elements of the Expressway; meetings with management of the Expressway operator and site staff available at the time of the site visits; reviews of available feasibility reports and other relevant information. In utilizing the given information provided by the Company, we have sought confirmation from the management of the Expressway that no material factors have been omitted. We concluded that sufficient and reliable information has been provided for conclusive review and comprehensive analysis.

The results of our analysis are presented in the “Yangping Expressway Maintenance Cost Estimation Study Report”. A brief summary of our study approaches and findings is presented below:

#### **E1. INTRODUCTION**

This operation and maintenance assessment consists of:

- Evaluation of the road conditions;

- Review and comment on the existing O&M Program, with respect to their adequacy and efficiency (cost); and
- Estimation of the future operation and maintenance costs for the remainder of the concession period (2015 to 2038) of the subject facility.

In accordance with the study objectives, scope and schedule, THI conducted a site visit on 11th March 2015 to perform: (a) brief visual assessment on selected portions and elements of the Expressway; and (b) meetings with Expressway Company (hereafter referred as “Operator”) and site staff available at the time of the site visits.

Please note that the scope of this study, however, is not to conduct a detailed inspection or a rigorous engineering analysis of the expressway, but rather, to provide a general overview of the project. The report is intended to give a review on the existing conditions of the expressway and the maintenance aspects in order that the risk, attributable cost and financial viability of the project can be assessed.

## **E2. TECHNICAL FINDINGS AND RECOMMENDATIONS**

The Expressway with a total length of 39.52 Km was designed for the classification of “Expressway” for Truck 20 – Trailer 120 loading with maximum design speed of 120kph respectively. All of the facilities were designed for “Flat/Light Rolling” topography.

During our investigation, we have retrieved some construction documents and O&M records for the facilities. According to the information we have reviewed, all of the facilities under study were designed in accordance with the “Highway Engineering Standard for “Flat/Light rolling” topography.

## **E3. OPERATION AND MAINTENANCE (O&M) COSTS**

The total annual O&M cost includes costs for minor repair/maintenance as well as medium and major repairs. Minor repairs and maintenance refers to the upkeep/preventative actions and minor repairing for normal operation of the highway to be maintained. Medium to major repairs are defined as the required periodical repairs in order to reinstate the original conditions of the highway after long term wear and tear.

The purpose of this study is to review the existing O&M program and to forms the basis in determining future maintenance needs in terms of cost and effort. Emphasis has been placed on major engineering elements and facility structures with the goal of matching the facility needs with the O&M program.

Considering the Expressway had completed in 2008, the major maintenance should be carried out for every 7 years from year 2019/2020.

THI has reviewed and evaluated the estimated maintenance costs and the maintenance schedule of the study roads. We concluded that the cost per km for the minor and maintenance fee is reasonable based on the conditions of the expressway and the anticipated level of traffic.

Operation and Maintenance costs for the concession period (RMB million)

Year	2015	2016	2019	2020	2025	2030	2035	2038
Cost	5.1	6.4	59.8	59.8	10.3	11.9	13.8	15.1

### **Management Costs**

The management costs include the salaries, staff costs and office administration costs. In view of the Operator has been operated from year 2008, the whole operation setup is well established and there will be no new toll plaza to be built in the foreseeable future, the management costs are therefore estimated on the basis of past and existing costs involved.

The future year's costs estimations are given in Table below:

Management costs for the concession period (RMB million)

Year	2015	2016	2019	2020	2025	2030	2035	2038
Cost	10.2	10.6	11.7	12.1	14.0	16.2	18.8	20.5



**E4. CONCLUSION**

The Consultant concluded that the assessment on the operation and maintenance are consistent with common professional practice and meets the objectives of the agreed scope of work with the Company. Full details of the Study and data are presented in the “Yangping Expressway Operation & Maintenance Cost Estimation Study Report”.

Yours sincerely,

For and on behalf of

**THI Asia Consultants Limited**



**Richard Yau**  
**Executive Director**



**Jessica Liang**  
**Project Manager**