Aberdeen Asset Management

PROJECT MOORE - VENDOR DUE DILIGENCE

Denver FasTracks Eagle P3 - Technical Adviser's Report

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CONFIDENTIAL

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EXECUTIVE SUMMARY

WSP has been appointed by Aberdeen Standard Investments to undertake Vendor technical due diligence on Denver Transit Partners (DTP). Aberdeen Infrastructure Investments (No. 4) USA LLC have a 45% ownership share of DTP. Our technical due diligence has concentrated on the technical principles and risk transfer of the portfolio of assets, identifying the fundamental commercial, construction and operational issues that exist from a technical perspective.

Table 1 - RAG Definitions

Definition	Risk Category
Red Flag: Material technical issue identified at the time of review, the Client should consider the implication of this risk in their price and its potential impact on equity. Strong asset management required to ensure the risk is managed and mitigated. This would be considered as a material risk until such time as it is mitigated or there is a robust management plan in place to mitigate it.	
Amber Flag: A technical issue has materialised at the time of the review, which has the potential to impact on project performance and equity if not managed appropriately. Will require the project parties to work together and implement a rectification plan, or a rectification plan is required to be produced. Potential for deterioration of key project relationships if not managed appropriately, however typical security provisions e.g. defects liability, PCG's are in place.	
Green Flag: No known material technical issues identified at the time of the review that could have a detrimental impact on project performance. Issues identified at the time of the review are considered to be manageable to an experienced investor. Typical security provisions e.g. defects liability, PCG's are in place.	

	Description / Key Points	Red / Amber / Green
Construction Matters	The asset build was in two phases with phase 1 in two parts. In phase 1 the A Line commenced operations on 22 April 2016 and the B Line on 25 July 2016. Phase 2 comprises the G line which commenced operation on 26 April 2019. Formally issuing Final Completion Certificates can take place only a minimum of 6 months after service commencement to allow for a performance demonstration period. These have been issued as follows: A Line – 3 August 2019	

	B line – 4 May 2018 G line – the earliest this could have taken place was 6 months after 30 September 2019, but defects prevented achieving this date; the Final Completion Certificate is expected shortly. As construction is complete the construction related risks have passed. Responsibility for any defects in the works rested with the Design and Build JV for one year from RSCC and this period has passed for the three operational lines. From the expiration of the applicable Warranty Period, the Operator is responsible for all costs and expenses resulting from defects, including latent defects, to the Works, which provides protection to DTP.	
O&M Matters	Operations and maintenance is the responsibility of Denver Transit Operators who has to date delivered good operational performance. WSP considers that the operational and maintenance requirements are in line with similar rail systems. We have reviewed current performance against contractual requirements and the project is performing well against those parameters. The project is not approaching any enhanced monitoring or default thresholds.	
Market Testing	There are provisions included within the contract for benchmarking of Services, which is typical for this sector.	
Third Party Revenue	Whilst there are no Third Party Revenue provisions under the Concession Agreement, should the project perform at over 97.7% there is the ability for bonus payments.	
Damage	The Operator is responsible for the rectification of any damage due to vandalism, lost or damaged fare system equipment and any damage to equipment that the Operator is responsible for maintaining. RTD is responsible for any damage if the estimated cost exceeds $5m or exceeds the insured amount.	
Utilities	The Operator is responsible for all utility costs now that the railway is in operation with the exception of electric traction power cost which are paid for by the Client RTD. This is appropriate as electric traction power usage is very dependent to the operational timetable which is the responsibility of RTD	
Service Provider Replacement	In the event that the Service Provider has to be replaced we consider that the Termination Cap represents a manageable position to allow for their replacement. This is based on current market conditions.	
Payment Mechanism	The Payment Mechanism is an availability based model that typically follows the broad principles that if the availability of the asset or the performance of the asset drops below set levels deductions from the Monthly Fee paid to DTP can be deducted. This in turn is passed down to the Operator.	
Commercial Matters	There is one significant residual construction matter relating to the design of level crossings resulting in a dispute concerning Change of Law. DTP, on behalf of the D&B JV, claimed relief for a Change in Law	

	under the Concession Agreement in relation to delays and changes dealing with the Federal Railroad Administration (FRA) and Colorado Public Utilities Commission (CPUC). This matter is ongoing however we would note that the D&B JV's claim is for in excess of $100m, however DTP remains insulated from the litigation since this was a risk passed down to the D&B JV	

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1 PROJECT DASHBOARD

KEY PARTIES	
Generic Term	**Company**
Authority	Regional Transportation District (RTD) in Denver, Colorado
SPV	Denver Transit Partners
Holding Company	Denver Transit Holdings owned by John Laing (45%), AGIP (45%) and Fluor Enterprises Inc. (10%).
Equity Members	Aberdeen Standard Investments, John Laing, Fluor
Design & Build Delivery Contractor (Infrastructure & Rolling Stock)	Denver Transit Systems (DTS) (Fluor and Balfour Beatty)
Infrastructure Contractor	Denver Transit Constructors (DTC) comprising Fluor, Balfour Beatty and Ames
Rolling Stock Supplier	Hyundai Rotem
Service Provider (The Operator)	Denver Transit Operations (DTO) comprising Fluor, Balfour Beatty and ACI
Independent Engineer	Jacobs
Lender's Technical Adviser (LTA)	Infrata Ltd + supporting companies

KEY DATA / RISK ALLOCATION	Value USD	Cost Risk Responsibility
Construction Value	1.35bn @ 2010 pricing	Denver Transit Systems (DTS)
Operational Service Costs	$52.3m in 2020	The Operator - Denver Transit Operations
Asset Replacement / Lifecycle Costs	$571.8m (nominal across remaining concession)	The Operator - Denver Transit Operations
PROJECT DATA		
Contract Type	DBFM	
Financial Close	August 2010	
Concession Period	34½ years	
Construction Completion	Stages between April 2016 and March 2019	
Commencement of Full Operations	31 March 2021	
End of Operations	31 December 2044	

2 INTRODUCTION

2.1.1. In September 2020, WSP was commissioned by Aberdeen Standard Investments to undertake Vendor technical due diligence on Project Moore, which consists of four projects (one healthcare project, one water treatment plant project, one rolling stock project and one rail project). This report is in relation to the FasTracks Project and is also referred to as the East and Gold Line Enterprise (the "Eagle") P3 Project.

2.1.2. Our technical due diligence has concentrated on the technical principles and risk transfer of the project, identifying the fundamental commercial and operational issues that exist from a technical perspective. This report has been produced solely from review of documents contained in the data room – documents 3.1.1. through to 3.1.32.

2.1.3. This WSP report has been produced through reviewing all documents provided by the Client to identify any risk and issues from WSP's experience of rail projects and systems similar to those delivered and operated through the Regional Transportation District of Denver's FasTracks programme for Phases 1 and 2.

2.1.4. WSP does not make representation or warranty as to the factual accuracy of the information provided to us via the data room or by the Vendor on which this report is based.

2.2 DISCLAIMER

2.2.1. WSP has provided this report solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

2.3 ABBREVIATIONS

Abbreviations	Definition
AR	Availability Ratio
CIL	Change in Law
CPUC	Colorado Public Utilities Commission
CRMF	Commuter Rail Maintenance Facility
DBFOM	Design Build Fund Operate & Maintain
DD	Due Diligence
DFCA	Denver FasTracks Concession Agreement
DFDBA	Denver FasTracks Design & Build Agreement
DFOMA	Denver FasTracks Operations and Maintenance Agreement
DTC	Denver Transit Constructors (DTC)
DTO	Denver Transit Operators
DTP	Denver Transit Partners

DTS	Denver Transit Systems
DUS	Denver Union Station
FCC	Final Completion Certificate
FRA	Federal Railroads Administration
IE	Independent Engineer
JV	Joint Venture
NRML	North Metro Rail Line
NWES	North West Electrified Segment
OCC	Operations Control Centre
O&M	Operations and Maintenance
ORN	Outstanding Requirements Notice
PTC	Positive Train Control
RSCC	Revenue Service Commencement Certificate
RTD	Regional Transportation District of Denver
SPV	Special Purpose Vehicle
TMDS	Train Management and Dispatch System

3 PROJECT OVERVIEW

3.1.1. The Regional Transportation District of Denver, more commonly referred to as RTD, is the regional agency operating public transit services in eight out of the twelve counties in the Denver-Aurora-Boulder Combined Statistical Area in Colorado. RTD currently operates a bus and rail system that has a service area of 2,342 square miles (6,070 km2). RTD is constructing the voter-approved FasTracks transit expansion that will add 122 miles (196 km) of new commuter rail and light rail and funded through an increase in sales tax of 0.4% and appropriated revenues.

3.1.2. The concession period with the Regional Transport District (the "RTD" or "Authority") and contained in the Concession and Lease Agreement, hereafter referred to as the Concession Agreement, was initially over a 46½ year period. It was subsequently reduced to 34½ years from 22 July 2010 until 31 December 2044, and its purpose is to expand and upgrade the current public transport system in two discreet phases comprising approximately 36 miles of new urban railway.

3.1.3. Financial close was achieved on 1 August 2010 and under the Concession Agreement, DTP are responsible for the financing, design and construction of certain Commuter Rail Projects and Commuter Rail Maintenance Facility, the design and installation of certain equipment for the Denver Union Station, the procurement of Rolling Stock, provision of the Commuter Rail Services and the operation and maintenance of the Commuter Rail Network and Rolling Stock. The DTP is compensated in the form of progress-based Construction Payments during the Design/Build Period and performance-based Service Payments during the Operating Period.

3.1.4. Phase 1 – the Design, Build, Finance, Operate and Maintain ("DBFOM") which equates to approximately 70% of total capex of $1.6bn and includes:

- The 23.6-mile East Corridor Project delivering the A Line using Electric Multiple Unit Rolling Stock providing a new connection between Denver International Airport and Denver Union station and includes a total of eight stations;
- Denver Union Station ("DUS") systems and track improvements involving signals, communications, traction systems and switches;
- The Commuter Rail Maintenance Facility ("CRMF") for up to 80 electric cars located northwest of downtown Denver 2 miles from DUS and between 41st and Fox station and Pecos Junction station. The CRMF houses the operations control centre (OCC) for the A Line, G Line and the initial phase of the North Western Corridor commuter rail system that will ultimately include all of the North West Corridor and the North Corridor (the N Line operated by RTD). Additionally, this is the central location for maintenance, storage of rolling stock and the shop and yard for infrastructure maintenance operations;
- Upgrading of the section of the North West Rail Electrification Segment ("NWES") from DUS to CRMF, known as the B Line, including the construction of a dedicated second track of approximately 1.7 miles in length, the electrification of the route and the first station. This portion of the Project is known as the Northwest Electrification Segment (NWES); and
- The procurement of rolling stock.

3.1.5. Phase 2 - the DBFOM which equates to approximately 30% of total capex of $1.6bn of:

- The 11.2-mile G Line using the same Rolling Stock type as the A and B lines including the extension of the NWES just north of Pecos Junction station to Wheat Ridge and includes a total of five stations which, when combined with the upgraded NWES, provide services between DUS and Wheat Ridge/Ward.

3.1.6. Following completion of construction and commissioning into passenger service the concession involves operations and maintenance of the delivered rail system up until the end of the concession on 31 December 2044. The Project is currently in operation following the final line opening to service in March 2019.

3.2 PROJECT LOCATION

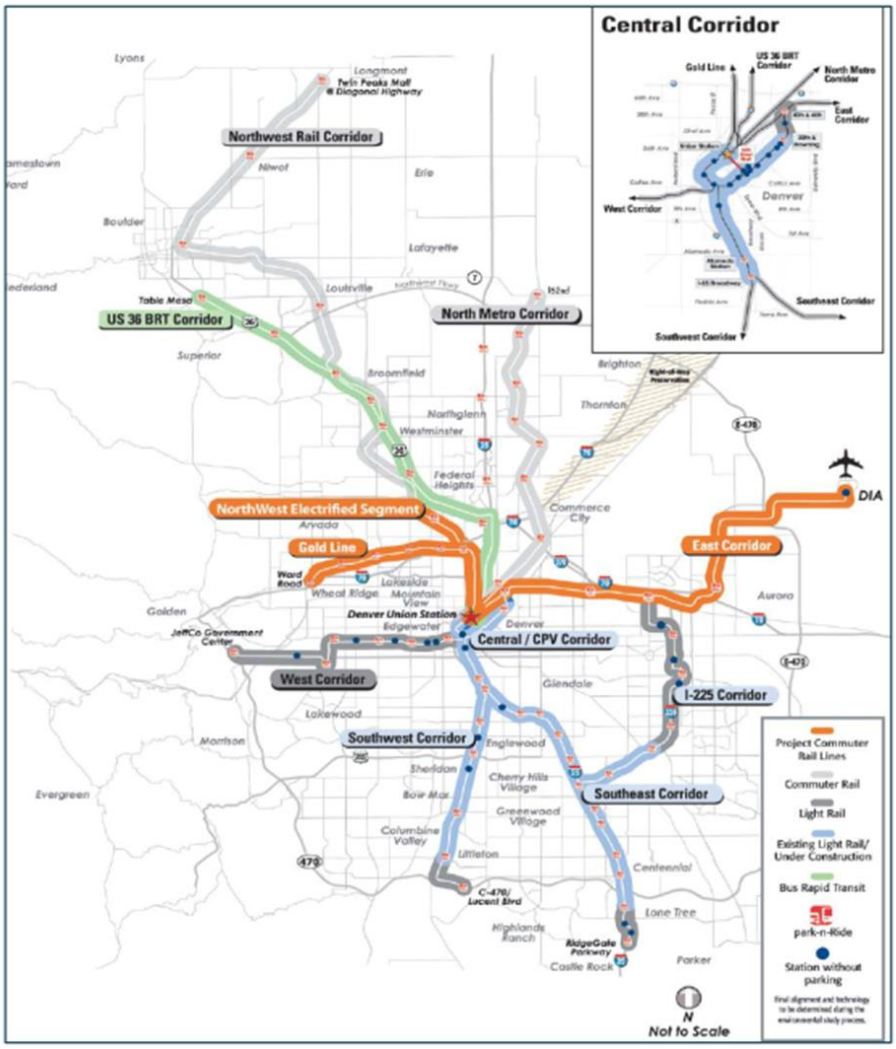


Figure 3-1 - Denver Transit Map

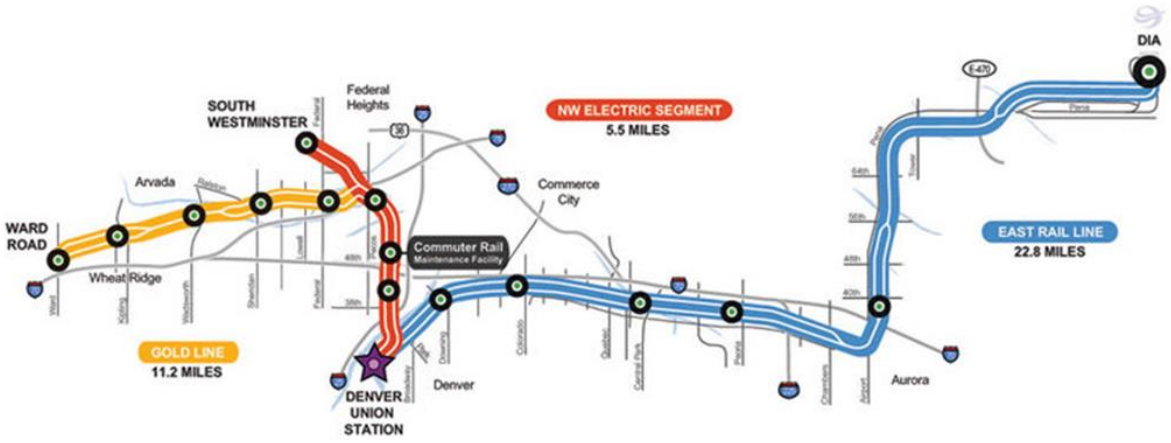


Figure 3-2 - Lines of the P3 Eagle Project

Figure 3-3 - Denver Union Station

Figures 3-4 – Rolling Stock

3.3 PROJECT TIMELINE

3.3.1. Figure 3.5 below provides a timeline for the Denver FasTracks Eagle P3 project.

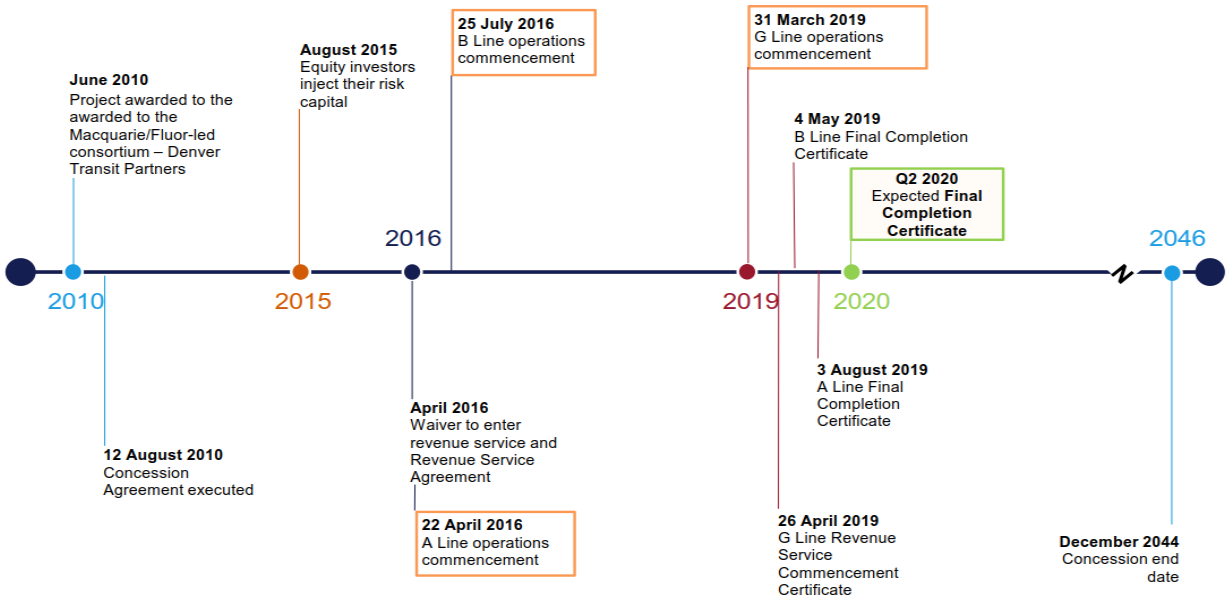


Figure 3-5 – Project timeline

3.3.2. The dates for start of operations dates and receipt of RSSC are:-

(a) 22 April 2016 - A Line commenced operations, running between Denver International Airport and Union Station. The Revenue Service Commencement Certificate (RSCC) was received on 6 September 2018;

(b) 25 July 2016 - B Line opened for passenger service, with operations between Westminster Station and Union Station. RSCC was received on 20 October 2017;

(c) 31 March 2019 – The G Line received its RSCC and began passenger service on 26 April 2019;

3.4 PROJECT STRUCTURE

3.4.1. The structure of the project is as illustrated in Figure 3.6 below. Balfour Beatty Rail Inc, Ames, ACI, Hyundai-Rotem and Fluor are the main contractors associated with the delivery of the Denver FasTracks Eagle P3 project.

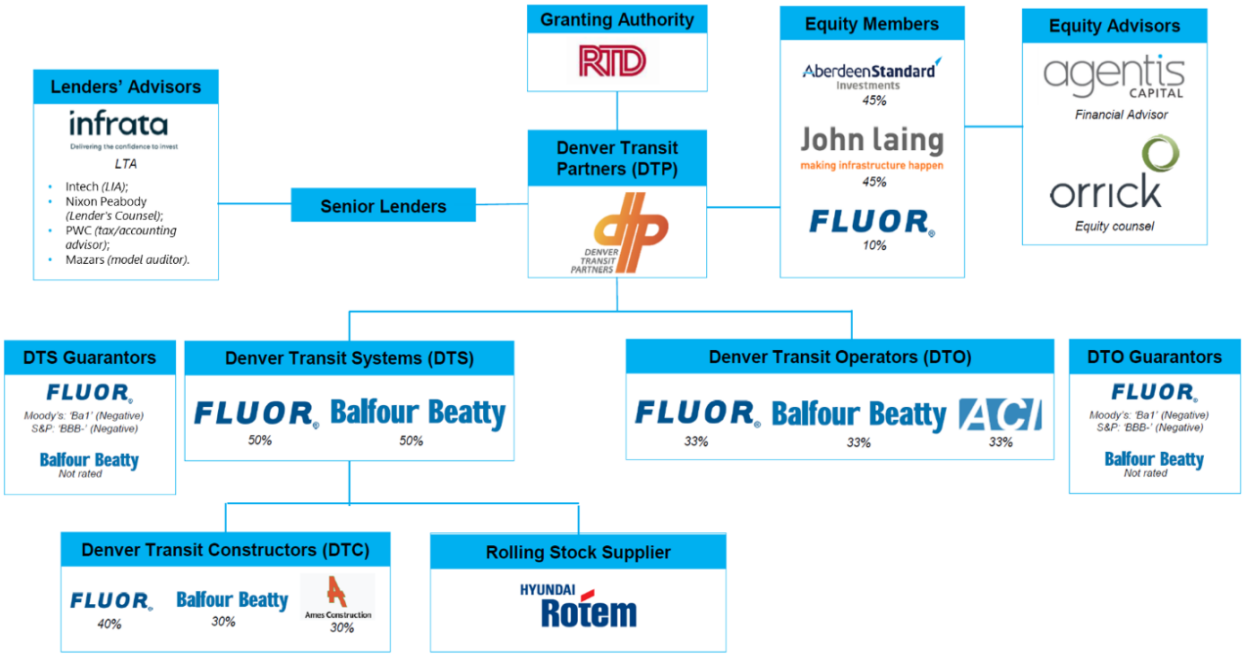


Figure 3-6 – Project Structure

3.5 PROJECT CONTRACT OVERVIEW

3.5.1. The Core project documents are as described below:

3.5.2. Denver Transit Partners (DTP) is party to the following core Project Documents:

- The Concession Agreement:
  - The Concession Agreement was signed on 9th July 2010 between RTD and DTP
- The Design and Build (D&B) Contract:
  - The D&B Contract was signed on 9th July 2010 between DTP and DTS (50% Flour, 50% Balfour Beatty).
  - The D&B Contract has been subject to two amendments on 22nd July 2010 and 6th August 2010.
- The Operation and Maintenance (O&M) Contract:
  - The O&M Contract was signed on 9th July 2010 between DTP and the Operator (33% Flour, 33% Balfour Beatty, 33% ACI) (the Operator)

3.5.3. DTS, as the D&B Contractor is party to:

- The infrastructure Design and Build contract
  - The infrastructure Design and Build contract was signed on 9 July 2010 between DTS and Denver Transit Constructors (40% Fluor, 30% Balfour Beatty and 30% Ames)
- The Rolling Stock Supply Contract:
  - The Rolling Stock Supply Contract was signed on 29th June 2010 between DTS and Hyundai-Rotem USA Corporation (the Rolling Stock Supplier).

3.5.4. DTS and the Operator are party to:

- The Interface Agreement:
  - The Interface Agreement was signed on 9th July 2010 between DTS and the Operator, as D&B and O&M Contractors respectively.

4 RISK ALLOCATION

4.1.1. A summary of the risk allocation between the contracted parties is outlined in Table 3.1 below:

Table 4-1 – Risk Allocation Table

Risk	Liability	Commentary	Cross-ref
Construction Completion / Longstop Date	DTS	As the works have been completed, achieving the Final Completion Deadline Date (Longstop Date) is not a risk. This date is 24 months after the last Revenue Service Commencement Certificate was issued so is 31 March 2021 as the G Line TRSCC was issued 31 March 2019.	N/A
Replacement of Building Contractor during the completion of construction works	DTS	As the works have been completed, replacement of the Building Contractor is not a risk.	N/A
Latent Defects	the Operator	From the expiry of the warranty period, any Latent Defects are the responsibility of the Operator.	5.2
Replacement of O&M Contractor	DTP	Based on the security package available the replacement of the O&M Subcontractor is therefore considered a manageable risk.	6.12
Performance	the Operator	Availability and Performance obligations have been passed down to the O&M Contractor	6.6
Payment Mechanism sensitivities	the Operator	Performance and Availability risk of deductions have been passed down on a back to back basis	6.4
Market Testing	N/A	There are provisions included within the contract for benchmarking of Services, which is typical for this sector.	6.9
Third Party Revenue /	N/A	There is no third party revenue.	N/A
Vandalism / Damage	the Operator RTD	The Operator is responsible for the rectification any damage due to vandalism, lost or damaged fare system equipment and any damage to equipment that the Operator is responsible for maintaining	6.8

Risk	Liability	Commentary	Cross-ref
		If the estimated cost exceeds $5m or exceeds the insured amount, DTP are required to produce a restoration plan for agreement with RTD. The cost of repairs shall be funded either by insurance of if insufficient by RTD.	
Utilities Consumption / Price Risk	RTD the Operator	RTD pay for a Traction Power following the Revenue Service Commencement Date for each line DTP pay for all other electrical power used in the performance of the Work	6.10
Sufficiency of Replacement and Refurbishment Fund	DTP	DTP has a budget in place to ensure that the infrastructure and rolling stock achieves the Availability ration and meets the handover requirements at the expiry of the Concession	7
Handback Position	The Operator	The Operator is required to return the infrastructure and rolling stock to RTD in a condition which is equivalent to a similar age system and is capable of complying with the O&M Standards for a period of not less than three years from the Expiry Date	7.3
Change of Law	RTD DPO	RTD is liable for any Discriminatory Change of Law For any other Change in Law RTD bears 100% of costs in respect of cumulative amounts >$3m, amounts under this are passed down to the Operator	8.3

5 RESIDUAL CONSTRUCTION MATTERS

5.1 INTRODUCTION

5.1.1. The B Line received its Final Completion Certificate (FCC) on May 4, 2018 and the A Line received its FCC on August 3, 2019.

5.1.2. The G Line infrastructure is complete, along with the safety certification process. The RSCC for the G Line was issued on March 31, 2019.

5.1.3. On September 21, 2020 the first phase of the N Line, the North Metro Rail commuter service to Thornton was inaugurated. The line had been expected to open in the first quarter of 2020 but was delayed. The 21 km first phase runs from Denver Union Station to Eastlake/124th in Thornton via Commerce City and Northglenn, serving five intermediate stations. Park-and-ride facilities have been built along the route. A planned 8·8 km extension to SH 7/162nd Avenue in North Adams County would add a further two stations, although this line is the responsibility of RTD and not DTP, the Commuter Rail Maintenance Facility ("CRMF") delivered by DTP is used by rolling stock on the N Line and will ultimately be the N Line operations control centre (OCC).

5.1.4. The earliest DTP was able to receive a G Line Final Completion Certificate was after a 6-month demonstration period starting September 30, 2019, where average on-time performance had to be greater than 94%. On September 29, 2019, the Independent Engineer (IE) provided an updated G Line Last Final Completion Outstanding Requirements Notice (ORN) in response to DTP's draft submission on September 20, 2019 identifying issues to be addressed in parallel with the performance demonstration period.

5.1.5. DTP anticipated completion of all remaining open items for the G Line Last Final Completion by Q2 2020. It can be noted that the design build contract with DTS has a Final Completion Deadline date that is 15 months after the G Line RSCC, which was received on March 31, 2019 making the DTS Final Completion Deadline date June 29, 2020. In early July 2020, DTS submitted the Rectification of Outstanding Requirements Notice (ORN) Index, the ORN requirements are complete including the System Testing and Commissioning Plan. The IE has provided the Draft G Line Final Completion Certificate for review by RTD and DTP. RTD and DTP/S legal staff are finalising the certificate's text.

5.1.6. WSP is of the opinion that whilst the Final Completion Certificate is later than required this is not a risk, as from the evidence in Management Reports the various parties involved are vertically integrated so incentivised to succeed and hence, all parties are working collaboratively to achieve completion.

5.2 WARRANTY AND DEFECTS LIABILITY PERIODS

5.2.1. Article 10 of the Design Build Contract covers General Warranty and requires DTS to warrant the following periods to the DTP:

- For the Gold Line Project delivering the G Line, 18 months following the Revenue Service Commencement Date;
- For the East Corridor Project delivering the A Line, 18 months following the Revenue Service Commencement Date;
- For the B Line, 18 months following the Revenue Service Commencement ;
- For the Commuter Rail Maintenance Facility, 18 months following the date on which Concessionaire accepts final completion of Contractor's Work with respect to the Commuter Rail Maintenance Facility in accordance with this Agreement;
- For the Rolling Stock, 2 years following the date on which Contractor accepts delivery of each Car in accordance with the Rolling Stock Supply Contract; and
- In the case of all design, construction and installation activities necessary for the full functionality of the DUS Rail Segment not provided as part of the DUS Infrastructure or the Fare System Equipment, 18 months following the date on which DTP/RTD accepts the DTS's Work with respect thereto.

5.2.2. This means the Design Build Warranties fall away 18 months after start of revenue service and 24 Months upon acceptance of the last car. Whilst shorter than we would normally expect there is quite a substantial Design Build Security and O&M Package.

5.2.3. The Concession Agreement Part A(I) defines the warranty period requirements, which require Denver Transit Constructors (DTC) to warrant each of the three lines for one year from their respective Revenue Service Commencement Dates and to warrant the CRMF for one year from final completion. The Concession Agreement Part A(II) defines the warranty period for the Rolling Stock as a period of two years from the date when each car is accepted.

5.2.4. From the expiry of the warranty period, which is the responsibility of DTC, any Latent Defects are the responsibility of the Operator. WSP considers such provision to be standard for such rail construction projects, although DTC will have to warrant equipment themselves as suppliers and subcontractors' equipment will have been in use well before operational commencement and the one year warranty provided by them may well have expired. From the expiration of the applicable Warranty Period, the Operator is responsible for all costs and expenses resulting from defects, including latent defects, to the Works, which provides protection to DTP.

5.1 ROLLING STOCK WARRANTY PROVISIONS

5.1.1. From the date of Final Acceptance, the following warranties are applicable to the rolling stock:

- Car Structure and Frame – 15 years;
- Truck (bogie) assemblies – 10 years; and
- Other items – 3 years.

5.1.2. WSP's experience of rolling stock warranty provisions would suggest that the car structure and truck assembly warranty periods are in line with industry expectations. WSP notes that no extended warranty is offered for other items that are usually subject to extended warranty (for example doors, air conditioning systems and axles).

5.2 SECURITY PACKAGE

5.2.1. The D&C Security Package can be summarised as follows;

- Liability Cap – overall D&B Liability Cap is capped at 45% of the contract sum;
- Performance Bond – 50% of the value of the Work to be undertaken in Phase 1 in any calendar year plus 5% of the value of the remaining amount or work to be undertaken on the whole project;
- Letter of Credit – On Demand Letter of Credit to the value of 6% of the Contract Sum; and
- Warranty Bond – 10% of the Contract Sum prior to the expiration of the last Warranty.

5.2.2. The level of liability cap and security measures are considered in line with other large scale urban metro PPP projects.

5.3 RESIDUAL CONSTRUCTION ISSUES

5.3.1. The A and B lines have received their Final Completion Certificates (FCC) on 3 August 2019 and 4 May 2018 respectively. The G line has been in passenger service since 26 April 2019 and a draft Final Completion Certificate has been provided by the IE, which is currently being reviewed by RTD and DTP. From the evidence available, all the requirements in the Outstanding Requirements Notice have been addressed and there appears to be no residual construction matters or defects preventing this FCC from being issued.

5.3.2. There is one significant residual construction matter relating to the design of level crossings resulting in a dispute concerning Change of Law. DTP, on behalf of the D&B JV, claimed relief for a Change in Law under the Concession Agreement in relation to delays and changes dealing with the Federal Railroad Administration (FRA) and Colorado Public Utilities Commission (CPUC). More details are contained in section 9.1.

5.4 INTERFACE AGREEMENT

5.4.1. Exhibit H of the Design & Build Contract is an Interface Agreement (IA) between DTP, DTS and the Operator. The IA effectively requires the DTS and the Operator to cooperate with each other in the performance of their respective obligations under the Design & Build Contract or the O&M Agreement, respectively in the full knowledge of each other's contract and without blaming the other contractor for their own poor performance. The IA acknowledges that DTS and the Operator are mutually dependent on each other and includes items such as design, change management, commissioning, asset information, spares, training and achievement of the Revenue Service Commencement Date and Final Completion for each line.

5.4.2. The IA sets out clear responsibilities for each of DTS and the Operator prior to the start of revenue service and establishes a Co-ordination Committee to co-ordinate the work between the two parties.

5.4.3. WSP considers the IA to cover the required scope, and notes that as the Project's design and build is complete and the Warranty Periods have expired, in accordance with Article 5 of the IA the IA has achieved its required purpose and its operating period has ended.

6 PERFORMANCE & REVENUE ANALYSIS

6.1 INTRODUCTION

6.1.1. This section of the report considers performance of the Project against the project requirements. This includes a review of the Performance Reports made available and how the Payment Mechanism has been applied to affect the revenue.

6.1.2. In the event that the Services are not delivered to the availability required, the Operator and ultimately the DTP can be terminated from the contract; the provisions for this are considered from a technical perspective against market expectations. The risks of Termination are then considered against the current delivery of the Services.

6.1.3. Finally, further consideration is given to the costs provided for the delivery of the O&M Service, also considering these costs in light of their robustness and the ability to replace the current O&M Provider within the Termination Limits of Liability.

6.1.4. The Services have been in operation in stages since 2016 since the first RSCC was issued. Since service commencement the level of service and performance appears to have been good.

6.2 O&M PROVIDER CAPABILITY

6.2.1. The Operator's organisational structure contains what would be expected for such a rail operation and the consistently good (and improving) performance of the three rail lines demonstrates the effectiveness of the Operator.

6.2.2. The Operator has a competent workforce; however, achieving the required workforce and managing staff retention is a challenge due to the low 2% unemployment rate in Denver and surrounding counties. Pressure on compensation and rewards has the potential to drive up operational costs due to the need to retain existing staff and attract new staff. The Operator has measures in to address this risk through continually hiring train operators and maintenance staff to ensure they have sufficient staff to de-risk high staff turnover in these critical roles. However, the Coivd-19 pandemic has had a significant impact on employment generally so this risk may reduce.

6.2.3. The vast majority of operations and maintenance work is undertaken by the Operator's direct labour workforce apart from cleaning.

6.2.4. The companies that the Operator is comprised of Fluor, Balfour Beatty and ACI who are very experienced in rail operations and maintenance.

6.2.5. WSP considers that the Operator is formed of competent companies/staff with experience in the rail sector and the good and improving performance of the three rail lines demonstrates the effectiveness of the Operator.

6.3 CONTRACTUAL O&M REQUIREMENTS

6.3.1. The Operations and Maintenance Agreement cover both the infrastructure and the rolling stock and in summary requires the Operator to:

- Provide pre operations services to support DTS in the design, construction and bringing into service the three lines A, B and G;
- Operate the commuter rail services from RSCC until the expiry of the Concession;
- Maintain the commuter rail services (infrastructure and rolling stock) to enable the availability requirements to be achieved and renew, refurbish the infrastructure and the rolling stock in such a condition to meet the required handover conditions at the expiry of the Concession; and
- Co-ordinate with RTD and stakeholders as necessary to deliver the commuter rail services as part of the wider.

6.3.2. There appears to be a good H&S management system and culture appropriate to a transit system in place. There is an Executive Safety and Security Committee to drive the safety culture from the top.

6.3.3. There is evidence of an increasing safety performance with a reducing (i.e. improving) trend in safety KPIs over the 4 years since operations began in 2016. These KPIs are reported in some detail in the monthly management report and include -

- FRA Reportable incidents comprising;
  - Highway-rail grade crossing accidents/incidents.
  - Rail equipment accidents/incidents.
  - Casualties to persons (i.e., death and non-fatal injuries to all types of persons, and occupational illnesses involving railroad employees).
- Lost Time Cases – workers days missed from work after an accident;
- Lost days;
- Restricted Day Cases;
- Restricted Days; and
- FRA Accountable Incidents.

6.3.4. The main H&S issues relates to trespassers particularly at the end of the line near the Airport where airport workers cross the route as a short cut. DTP are proactively addressing this through increased inspection of fencing, greater publicity, visits to local schools and increased police enforcement.

6.3.5. A cyclist was killed in June 2020 on the A line through being hit by a train whilst crossing the tracks allegedly disregarding the road signals at the level crossing near the intersection of Smith Road and Quebec Street. The cyclist, an adult male, is believed to have crossed the tracks against the signals when he was hit by the train. This is therefore considered not a risk to DTP.

6.3.6. WSP considers that the operational and maintenance requirements are in line with similar rail systems.

6.4 REVENUE AND PAYMENT

Comparison of Payment Mechanism with market norms / standard form

6.4.1. The Payment Mechanism is an availability based model that typically follows the broad principles that if the availability of the asset or the performance of the asset drops below set levels deductions from the Monthly Fee paid to DTP can be deducted. This in turn is passed down to the Operator.

6.4.2. The Payment mechanism contains the following provisions:

- Availability Adjusted Base Service Payment (This covers the availability of Stations, the On Time Availability of Trains and Rolling Stock);
- Performance Deduction – These deductions revolve around Service Task Order Points (STOP) and essentially provide the KPI's against which Performance deductions can be levied; and
- Special Events Deduction.

Availability Adjusted Base Service Payment

6.4.3. The Availability Adjusted Base Service Payment constitutes three parts these being the Adjustable Base Service Payment multiplied by the Availability Factor plus the Fixed Service Payment. These three elements are defined as the Base Annual Service Payment.

6.4.4. The Base Annual Service Payment (BASP) is split between each commuter lines and comprises a Fixed portion and Adjustable portion. The adjustable portion is defined as being the difference between lowest BASP in that given year and the average BASP over the 30 year Concession.

6.4.5. The Fixed BASP is the difference between BASP in that given year and the adjustable BASP in that given year.

6.4.6. The adjustable portion of the Base Service Payment consists of two parts the indexed element and non-indexed element. There is provision under the Concession Agreement within clause 45 to replace the existing indexation provisions which are the average on the Consumer Price Index, Labour Index and Materials Index in the event that these are failing to adequately track actual costs. This provision is beneficial to the project.

6.4.7. The Monthly Service Payment (MSP) in any contract month is split into two constituent parts these being the Appropriated Service Payment which is essentially the payment made to the O&M Contractor and the TABOR secure payment which pays the debt service and this portion of the MSP is not subject to appropriations and is therefore considered beneficial to the project.

Availability Factor

6.4.8. The availability Factor is reliant on the Availability ratios which are set out and defined in Appendix 11 of the Concession Agreement. It is calculated for each individual track line of the project and is a weighted average comprising Rolling Stock Availability, Station Availability and On Time Availability.

- Rolling Stock Availability Accounts for 50% of the Availability Ratio;
- On Time Availability accounts for 33% of the Availability Ratio; and
- Station Availability Accounts for 17% of the Availability Ratio.

6.4.9. The Availability Ratio is hence determined by calculating actual scheduled station opening times against station downtime vents, number of scheduled cars on the timetable against actual scheduled cars and actual departures / arrivals against scheduled departures / arrivals. The formula then provides a weighted Availability Factor for that contract month,

6.4.10. The target Availability Factor has been set at 97.7% which attracts 100% Availability Payment thus any movement down from this results in deductions down to a floor of 80%. Similarly, if the Availability Factor goes higher than 97.7% this results in a graduated bonus arrangement. This arrangement essentially provides that the project has to be operating at 97.7% to achieve 100% MSP and deviation below this results in deductions any deviation above this results in additional revenue to the project. Deductions and additional revenue have been passed down the DTO.

Performance Deductions

6.4.11. Performance deductions are calculated by multiplying the Adjustable Base Service Payment by the Performance Deduction percentage.

6.4.12. Performance Deductions are levied by the accrual of STOP points. These have been split essentially into KPI's across all areas of the project for example elevator availability, rolling stock Cleanliness, availability of seats, track safety equipment, real time displays and parking lot lighting. Each of these KPI's are typical with what we would expect for a PPP project of this nature. Each KPI has been allocated STOP Points between 2 -5 points.

6.4.13. The calibration of these points has been set such that it is a gradual increase in the level of performance deductions up to a maximum cap of 5% of the MSP. This being the equivalent of 279 STOP Points.

6.4.14. There is an escalation provision which provides should an event not be remedied within the set rectification time this escalation factor provides a graduated escalation from 100% - 200% after 48 hours.

6.4.15. It is noted that there is provision that the accrual of the first 50 STOP Points does not result in any Performance Deduction.

Special Events Adjustments

6.4.16. The Concession Agreement provides that additional services are required to be provided when there are special events such as major sporting events where additional car services are required.

6.4.17. The Special Events Adjustment is calculated by multiplying the Service Hour Price by the Actual Incremental Compliant Car Hours multiplied by the Actual Scheduled Compliant Car Ratio.

6.4.18. For such events there is a cap that for special events adjustments actual car hours cannot exceed 10% of the scheduled car hours for that contract year.

General

6.4.19. There is provision for Excusing Causes and Relief Events and these are considered robust and appropriate thus providing the appropriate relief from deductions and termination respectively.

6.4.20. The provisions described above are typical provisions that we would expect in a large scale transportation PPP project and it does not contain provisions which we would consider that the wider PPP market has not accepted elsewhere.

6.5 TERMINATION

6.5.1. Termination is addressed in Part 11 of the Concession Agreement and includes 21 criteria for termination. These include failure to complete the design and construction on time, financial or funding failure of the concessionaire, non-compliance with the concession requirements, disposal of all or part of the assets without RTD agreement, failure to provide security and failure to achieve operational performance requirements.

6.5.2. The Project provides for generally standard provisions for termination as WSP would expect for a typical PPP Project.

6.5.3. In relation to termination for availability and performance these can be summarised as follows;

Concession Agreement	O&M Agreement
Availability Ratio of less than 85% for six of any eight months	Availability Ratio of less than 89% for five out of any of any seven months
Performance deductions exceed an average of 3% of Adjustable Base Service Payment for six or more months of any rolling eight month period	Performance deductions exceed an average of 2.9% of Adjustable Base Service Payment for five or more months of any rolling seven month period

6.5.4. There is provision in the O&M agreement for the ability of the DTP to demand formal monitoring and review including contractual obligations in respect of formal remedial plans set at levels which are higher than the default and termination set levels as is typical in PPP Projects.

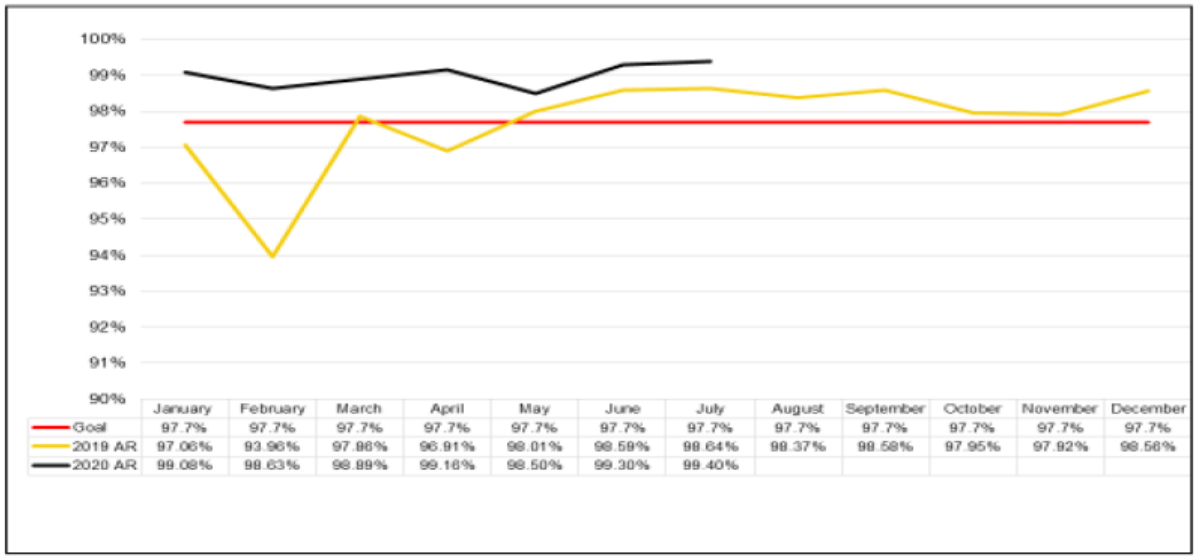
6.5.5. The termination provisions have been passed down into the O&M contract and suitably stepped down which should allow for adequate headroom to replace the Operator.

6.5.6. WSP considers that the termination provisions are in line with similar Global PPP Projects.

6.6 CURRENT PERFORMANCE VS. TERMINATION THRESHOLDS

6.6.1. The Services have been in operation since 22 April 2016 on the A line running between Denver International Airport and Union Station. Since service commencement the level of service and performance appears to have been good, as is shown the Figure 5-1 below, which is taken from the August 2020 Management Report.

6.6.2. Figure 6-1 shows that the availability ratio exceeds target and has significantly improved in 2020 compared to 2019 and there is a very low risk of a Remedial Plan being required. Thus, the project is performing well and not approaching and termination thresholds.



	January	February	March	April	May	June	July	August	September	October	November	December
Goal	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%
2019 AR	97.06%	93.96%	97.86%	96.91%	98.01%	98.59%	98.64%	98.37%	98.58%	97.95%	97.92%	98.56%
2020 AR	99.08%	98.63%	98.89%	99.18%	98.50%	99.30%	99.40%					

Figure 6-1 - Availability Ratio for Combined A, B & G Lines

6.6.3. Figure 6-2 shows, as an example, the more detailed Availability Ratio for one line, the A line. During this reporting period the Operator experienced two days, July 16th and 21st, where the Availability Ratio (AR) did not meet 97.7%.

- A Line AR on July 16th was 94.5%. A Line service delays were attributed to mechanical issues - these being a door fault on car 4033/34 and 4007/08 which required the spare set to be sent out as a rescue train, this resulted in 6 overall annulled trips; and
- A Line AR on July 21st was 95.7%. A Line service delays were attributed to Train Management and Dispatch System (TMDS) issues which led to it having to be restarted, as well as both On Board and Wayside Positive Train Control (PTC) issues.

6.6.4. During the same period the B and G lines experienced no days where the Availability Ratio (AR) was below 97.7%.

6.6.5. Notwithstanding the above where deductions were levied the project is not approaching either enhanced monitoring levels or default termination levels.

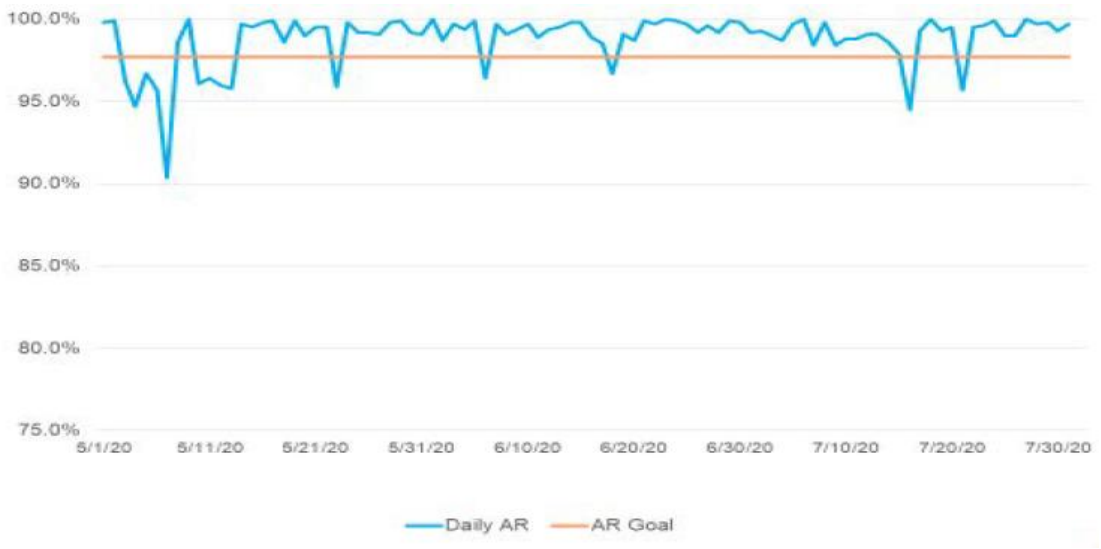


Figure 6-2 - A Line 90 day Average Availability Ratio

6.7 CURRENT OPERATIONAL MATTERS

6.7.1. On 10 March 2020, DTP submitted a Force Majeure Notice regarding the outbreak of COVID-19 in Colorado on or about 4 March 2020, as reported by the Denver newspapers, and more broadly with respect to the global occurrence of the novel Coronavirus. In this notice, DTP noted Colorado's Governor declared a state of emergency on 10 March 2020. Reference was made to the definitions of Force Majeure found in the Concession Agreement. DTP also noted that the likely duration and consequences of the Colorado outbreak and global epidemic and impacts on DTP and the Operator's performance, were not reasonably ascertainable, and as stated above DTP and the Operator have no knowledge of any obligation under the Concession Agreement.

6.7.2. On March 25, 2020, RTD denied DTPs Force Majeure Notice stating that "while RTD appreciates DTP's efforts to keep RTD apprised of potential impacts to Project operations due to the pandemic, it is RTD's position that DTP has not submitted a proper Force Majeure Notice pursuant to the Concession and Lease Agreement."

6.7.3. On April 26, 2020, the Governor of Colorado issued Executive Order D 2020 044, "Safer at Home," followed shortly thereafter by the Colorado Department of Public Health, Public Health Order 20-28 "Safer at Home." These orders are a considered by DFP to be a Change in Law (CIL) and they are currently developing an additional CIL notice to submit to RTD to support the previously submitted CIL and Force Majeure notices. These orders in April 2020 from the governor's office and the Colorado Department of Public Health are intended to limit social gatherings and promote social distancing, as well as provide guidance for appropriate PPE measures to be implemented. These orders were proposed to remain in place for a minimum of 30 days, or unless extended by additional executive orders.

6.7.4. As requested by RTD, DTP and the Operator developed a contingency plan that phased a reduction of operational service. On April 1, 2020 RTD provided written direction to DTP and the Operator to implement phase 1 and phase 2 of this proposed contingency plan, which was implemented on April 19 to coincide with the planned RTD service reductions. These service reductions modify the B line to 60-minute headways and G Line 30-minute headways. With these service reductions the Operator was able to free up four operators on a daily basis.

6.7.5. As a part of this service reduction the Operator developed and submitted a revised timetable/schedule to account for the reduction in service for the B and G Lines. In their correspondence on April 1, 2020 RTD has noted, that "RTD will not withhold service payment for the reduced service on the B & G CR Lines." RTD has commented that the service reduction on the B and G Lines will remain in place, in parallel with RTD's LRT and Bus Operation, until such time the pandemic plan can be lifted and the RTD LRT, Bus and Commuter Rail can return to a regular schedule. In a press release RTD noted that their reduction of LRT and Bus Service will remain in place until their next planned service change in September 2020.

6.7.6. The Operator is taking measured steps to fulfil the Eagle service including additional staff to ensure rollout of train service is covered. The Operator has encountered several instances where they were not able to fulfil service requirements and run full schedules prior to the service reduction on April 19, 2020.

6.7.7. DTP, the Operator and RTD have been in contact regarding these issues including M-W-F COVID-19 conference calls, as well as the weekly COVID-19 Force Majeure Updates that are provided to RTD by the Operator. Examples of COVID-19 related service delays include the following:

- 7 April 2020 – Operator shortage resulting in seven (7) missed trips on the A Line;
- 7 April 2020 – Rolling Stock Availability was impacted by the need to remove vehicles for additional cleaning of biohazard on the cars resulting in reduced compliant car miles;
- 11 April 2020 – Rolling Stock Availability was impacted by the need to remove vehicles for additional cleaning of biohazard on the cars resulting in reduced compliant car miles;
- 12 April 2020 – Rolling Stock Availability was impacted by the need to remove vehicles for additional cleaning of biohazard on the cars reduced compliant car miles; and
- 17 April 2020 – Operator shortage resulting in five (5) missed trips on the G Line.

6.7.8. The Operator's management has provided briefings to all of the Operator's staff regarding the precautions and updated interim operating practices for staff interactions due to COVID-19,

6.7.9. It is not yet clear what the full impact of the COVID-19 pandemic will be, however, reduction in demand for travel is likely to last for some time and may result in longer term reduced demand as more people work from home. However, as RTD holds revenue risk and specifies the service timetable and pay DTP through an availability payment, DTP are not at risk.

6.8 VANDALISM

6.8.1. In the Concession Agreement if vandalism is caused by a third party, provided DTP has taken reasonable actions to prevent vandalism, this will be a Delay Event Exclusion (if demonstrated to the Authority's satisfaction), and therefore the Authority's responsibility. This flows down to the Operator into the scope of the O&M Agreement under clause 3.2, which notes that the Operator is required to perform maintenance and repairs to the DTP operated Components including as a result of vandalism.

6.9 MARKET TESTING PROVISIONS

6.9.1. There are provisions included within the contract for benchmarking of Services, which is typical for this sector.

6.10 UTILITIES

6.10.1. During the design and build stage DTS were responsible for the utilities but this responsibility has now passed as construction is complete.

6.10.2. Section 29.15 of the CA sets out the responsibilities for payment of electrical power, these are split between the RTD and DTP as follows

- RTD pay for all Traction Power following the Revenue Service Commencement Date for each line; and
- DTP pay for all other electrical power used in the performance of the Work.

6.10.3. DTP executes all documents and necessary reasonable actions to enable RTD to make such payments directly to the supplier of Traction Power. DTP provides RTD a Traction Power Usage Report after delivery of the monthly Traction Power invoice from the supplier of Traction Power.

6.10.4. Section 3.22 of the O&M Agreement states that the Operator is responsible for all utilities apart from electrical traction power.

6.10.5. Traction power will be the main utility cost and the amount of electrical power will vary depending on the train service and weather, the remaining electrical power and other utility costs will be much less and generally constant and not dependent on the train service or passenger demand.

6.10.6. The Operator is responsible for all utilities for the Commuter Rail Maintenance Facility (CRMF)

6.10.7. As the main utility risk of traction power is with RTD and the Operator is responsible for all other utilities there is no utility risk to the DTP.

6.11 O&M SECURITY PACKAGE

6.11.1. The O&M Contract Security Package can be summarised as follows:

- Liability cap – set at US$67,978,884 (Indexed);
- Parent Company Guarantee;
- O&M Letter of Credit – US$ 22,659,628 (indexed);
- Renewal Works Letter of Credit – Subject to certain conditions to maintain the required security amount, including set conditions if the Availability ratio falls below 91% over 4 months in any 12-month period and Performance Deductions fall below 2.3% of the adjustable base service payment; and
- Handover Security – 120% of the reinstatement amount 18 months prior to Expiry.

6.11.2. WSP notes that the limit of liability does not include performance deductions, insurance, costs related to gross negligence or costs related to abandonment.

6.11.3. The O&M security Package is considered typical and in line with what we would expect for a large scale urban metro PPP Project.

6.12 OPERATOR REPLACEMENT ANALYSIS

6.12.1. In the event of termination of the O&M Agreement, the O&M Liability Cap is required to cover additional costs incurred by the DTP in engaging another subcontractor to deliver the availability and maintenance services.

6.12.2. WSP has undertaken an analysis to test the security package to increased costs of a new O&M Contractor. A new O&M Contractor is likely to charge a premium over the incumbent due to the initial lack of knowledge of the fleet and potential repricing of materials & spares. A new O&M Contractor will also understand that the continuity of operation will be important to DTP's business model and will seek to exploit this.

6.12.3. Market Dynamics in the American and global rolling stock maintenance market at the time of a switch will dictate a replacement O&M subcontractors pricing, and hence any additional costs due to a switch. There are multiple organisations (for example ACS, Bechtel, Keolis, Veolia) who have the capabilities required to fulfil the contract.

6.12.4. A contract switch in the next 10 years would result in a contract with a significant time remaining (over 15 years), establishing a long contract with time for the new contractor to fully understand the fleet and optimise operations. This may drive a lower additional cost of maintenance post-switch than in a scenario where there are just a few years remaining.

6.12.5. It is WSP's view that process of engaging a new O&M Subcontractor would incur a one-off cost in the region of $1.25 million to cover professional advisor fees (Legal Advisor, Technical Advisor etc). WSP has calculated the additional cost due to an O&M Subcontractor switch for three cost increase scenarios:

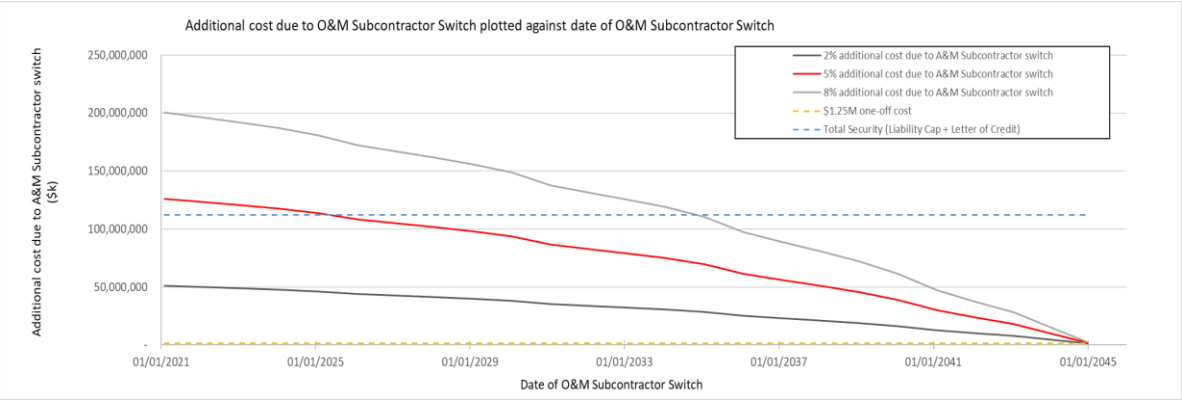
- 2%, 5% and 8%. Cost increases have been applied to the Operator Fee and the Renewal Payment. These are shown plotted against the date of the graph below.

6.12.6. The graph illustrates that an increase in O&M subcontractor pricing up to 5% would generally be covered by the security package. An increase of 8% would theoretically not be covered by the security package until 2035.

6.12.7. The US and global rolling stock maintenance market is currently competitive and WSP would expect this to be the case in the medium-term, hence a competitive tender process may achieve a 5% or less additional cost.

6.12.8. WSP also notes that the main parties that comprise the Operator i.e. Fluor, Balfour Beatty and ACI all have significant rail maintenance experience and could step in/retender for the work separately, given their knowledge of the project this would likely result in a reduced premium. The replacement of the O&M Subcontractor is therefore considered a manageable risk.

Figure 6-3 - O&M Replacement Analysis



7 ASSET MANAGEMENT

7.1 INTRODUCTION

7.1.1. The Operator is for maintaining, repairing and replacing consumable and life-expired items for and appropriately rehabilitate or overhaul the Rolling Stock throughout the duration of the concession period. WSP notes that lifecycle risk in terms of performance and financial adequacy has been fully passed down to the Operator.

7.1.2. Attachment 10 to the Concession Agreement contains a comprehensive scope including in relation the maintenance and supply chain requirements. Renewal Work is any lifecycle maintenance, repair, renewal, etc, of a type which is not normally included as an annually recurring cost in commuter rail line maintenance and repair budgets.

7.1 O&M COSTS REVIEW

Operations

7.1.1. For operations the Operator is led by a Deputy General Manager for Operations reporting to the General Manager. The operations organisation and associated cost appears appropriate for such a railway and the effectiveness is shown to date through the operational performance exceeding the Availability ratio.

7.1.2. WSP has undertaken a simple analysis of the cost included in the financial model for 2020 (c$52.3m), this equates to c$0.8m per route km, which is considered a reasonable cost allowance for a USA commuter rail service with manually driven trains.

Maintenance

7.1.3. For maintenance the Operator is led by a Deputy General Manager for Operations reporting to the General Manager who has two direct reports, one for infrastructure and one for rolling stock.

7.1.4. The Operator has an Enterprise Asset Management system in place for infrastructure asset management and this includes defect management, preventative maintenance, condition tracking and spares management. Such a system demonstrates commitment to effective infrastructure management.

7.1.5. An infrastructure maintenance and renewals plan is in place to the end of the concession period with significant track renewals in 2040 and signal renewals in 2035 and 2043-44, which shows that the Operator is ensuring the asset is kept in good condition throughout the concession and will hand back the infrastructure and rolling stock in good condition at the end of the concession. Overall maintenance is undertaken by direct labour to relevant standards.

7.1.6. WSP has undertaken a simple analysis of the cost/financial model and assess that the nominal renewal cost is $571.8m over the remaining life of the Concession; 45% of this is for rolling stock an 55% on infrastructure and the total is 45% of the Capex cost. For the remainder of the Concession this equates to an annual spend of $0.363.7m per route km for infrastructure and rolling stock.

Conclusion

7.1.7. WSP considers that the operations organisation and the infrastructure maintenance and renewals plan is appropriate for such a railway and contains significant maintenance investment through the Concession period. Regarding the costs our analysis shows the total nominal operations and maintenance cost over the remaining 24 years of the concession is £1.645m per route km. This appears within the range of expected cost but is towards the low end of the range.

7.1.8. Based on the information received and the results from our benchmarking analysis, WSP considers the available Refurbishment and Replacement costs to be sufficient to enable a competent Operator to discharge its maintenance obligations, subject to robust management and execution of the works.

7.2 CONTRACTUAL CONSIDERATIONS

Asset Maintenance and Repair

7.2.1. The Operator has an Enterprise Asset Management system in place for infrastructure asset management and this includes defect management, preventative maintenance, condition tracking and spares management. Such a system demonstrates commitment to effective infrastructure maintenance management.

7.2.2. An infrastructure maintenance and renewals plan is in place that goes all the way to the end of the concession with significant track renewals in 2040 and signal renewals in 2035 and 2043-44, which shows that the Operator is ensuring the asset is kept in good condition throughout the concession and will handover the infrastructure and rolling stock in good condition at the end of the concession. Overall maintenance is undertaken by direct labour to relevant standards.

Renewal Works Security

7.2.3. On an annual basis the Operator will submit a 5 year forward looking renewal plan, which is subject to review by the Lender's Technical Adviser (LTA). On an annual an analysis of the Renewal Work Amount will be undertaken to determine if a variance exists of:

- Greater than $1m or 10% of the cost of Renewal Works set forth in the Renewal Work Budget and Schedule for such year;
- The amount remaining undrawn in the O&M Letter of Credit is than an amount equal to 75% of the Required Security Amount then required; and
- The Availability Ratio of any Commuter Rail Service was less than 91% in four or more calendar months in any rolling six-month period in the previous year, or the Performance Deduction Percentage exceeded 2.3% of the Adjustable Base Service Payment for the relevant month in four or more months in any rolling six-month period in the previous year.

7.2.4. If the above is true then the Operator must provide a Letter of Credit for the variance between the original forecast renewal cost and the estimated renewal cost for the budget year. This provides protection should it become necessary to replace the Operator.

Rolling Stock O&M Management

7.2.5. The rolling stock consists of 66 25kV AC electric Hyundai Rotem cars formed into 2 car units. Rolling stock operating performance requirements are based around an availability ratio of an average of 95%, with a remedial plan required to be accepted by DTP if the availability ratio drops below 95% per period or a performance deduction percentage exceeds an average of 2.3% for four or more months of any 6 months. The latest management report in August 2020 showed rolling stock performance to be 99.7%, however, this figure will be skewed due to COVID related service and passenger demand reductions, in Q4 2019 before COVID the rolling stock availability was 98.9% which is well above the remedial plan level.

7.2.6. Rolling stock has a maintenance plan with regular interventions at 4-5 year and 9-10 year intervals. The typical life of heavy rail rolling stock is c35 years from introduction, so at the end of the concession the rolling stock will be up to 28 years old so will have around 7 years residual life.

7.2.7. In February 2017 a rolling stock unit was damaged through a collision with a truck at an grade crossing and the repairs have taken over 3 years and remain to be completed. The extent of the damage was not realised until the damaged components were removed and a thorough assessment undertaken. At the time of the incident the warranties came into play and DTS worked with Hyundai Rotem to get the cars repaired; there were several long lead items that had to be procured to allow for the repairs. By the time the long lead time procurement issues were resolved and parts received, the COVID-19 pandemic travel restrictions prevented Hyundai Rotem staff from travelling from Korea to undertake the repairs. Consequently, the Operator has been sourcing components and undertaking the repairs in house; as recently as early October 2020 the Operator progressed

the repairs using the shop shore power to confirm the systems that were damaged by the incident, and the software and systems that need to be updated since the incident in 2017.

7.2.8. There are still elements that Hyundai Rotem will require to undertake to complete the repair, once they are able to travel to the CRMF from South Korea they will do so to recertify the cars and get them back into service. Pre-COVID the anticipated return to service of the cars was the end of 2020, this is being reassessed due to the COVID travel restrictions to arrange the commissioning as soon as practically possible. At the end of the repairs there will be a month long testing and commission prior to returning to service.

7.2.9. WSP's view is that the rolling stock is performing well as it consistently exceeds the required availability. The incident in February was unfortunate and such incidents are relatively rare, the experience of DTP, DTS, Hyundai Rotem and the Operator working together shows good collaboration and will provide valuable lessons for the future.

7.3 HANDBACK

7.3.1. In the CA the term Handover is used for when the Concessionaire hands over the infrastructure and rolling stock to RTD at the expiry date of the Concession i.e. 31 December 2044. Section 44 of the CA states the requirements in a Handover and Reinstatement procedure applies and this requires the Concessionaire to return the infrastructure and rolling stock to RTD in a condition which:

- could reasonably be expected of an equivalent rail system which has been in existence and operated for a period equal to the period during which the relevant Commuter Rail Project has been operated and which has been maintained in accordance with the O&M Standards during that period; and
- is capable of complying with the O&M Standards for a period of not less than three years from the Expiry Date

7.3.2. Attachment 14 of the CA requires the Concessionaire to undertake any necessary reinstatement work to achieve the following requirements:

- the main civil and structural works shall not exhibit any undue signs of damage, wear, stress, cracking, settlement, corrosion, or weather erosion, such that they cannot reasonably be expected to satisfy their full design life specification and to support reliable service operations for a period of three years beyond the Expiry Date;
- limited life and "wear and tear" components have been replaced by the DTP in accordance with Good Industry Practice as and when they failed, wore out, or reached their design life or customary replacement frequency, as part of ongoing maintenance activities;
- major electrical and mechanical components or equipment (excluding the Rolling Stock) have been repaired, refurbished, or replaced by the DTP as appropriate if their condition indicates that they are unlikely to support reliable service operations (without recourse to major repair) for a period of three years beyond the Concession expiry date; and
- Rolling Stock and its components, whether original or replacement equipment, has been, and continues to be, maintained in accordance with the original equipment manufacturers' recommendations, subject to reasonable modification of maintenance practices, up until the Concession expiry date.

7.3.3. WSP consider that the Handover conditions/obligations are straightforward and achievable as we would typically expect a period of five not three years to be applied. The obligations in relation to Handover are passed down to the Operator.

8 VARIATIONS AND MODIFICATIONS

8.1 PROCESS

8.1.1. Under the Concession Agreement and the O&M Agreement the RTD and DTP are entitled to propose Modifications.

8.1.2. DTP is required to price, agree scope and price with the Authority and undertake the required modification to RTD's satisfaction and will be recompensed in accordance with the Concession Agreement. If a DTP proposed change results in a reduction in the cost of the Project, the cost reduction will be shared with 45% for the RTD and 55% for DTP.

RTD proposed changes are submitted at the RTD's cost. DTP can object to an RTD change on the grounds of safety of the Relevant Commuter Rail Service. Various notices setting out details of costs and work required will be required to be exchanged between the Parties, which is standard in change mechanisms. DTP may claim for a Relief Event if the Authority choses to go ahead with an Authority proposed change, although DTP's costs and time requirements cannot exceed those stated in its first notice.

8.2 SUMMARY OF VARIATIONS TO DATE

8.2.1. There have been four amendments to the Concession Agreement since it was originally executed on 9 July 2010. These amendments have reduced the concession term by 12 years, brought payments for construction forward from 2013 to 2012, and permitted the East Line entry into passenger service despite the Independent Engineer not certifying the system as complete as required by the Concession Agreement.

8.2.2. It had been the intention for DTP to be the operator and maintainer of the North Metro Rail Line (NRML) built by others as well as the A, B and G Lines but RTD decided in October 2017 to manage Operations and Maintenance of the NRML directly themselves from a different control centre than that provided by DTP. DTP remained responsible for providing traction power co-ordinating the introduction of NRML which opened to passenger service on 21 September 2020.

8.3 CHANGE IN LAW

8.3.1. If a Change in Law occurs which results in an increase in costs of the carrying out of the operation and maintenance during the Operating Period and/or will have an adverse effect on the financial position of the DTP as established in the Financial Model, the parties will enter into a Change in order to compensate the DTP for the increased costs. The risk is shared whereby the RTD will pay Incurred Costs that exceed $100,000 annually or $3m in aggregate. Likewise, DTP can retain any decrease in income resulting from a Change in Law up to these thresholds and amounts above will be reflected in a reduction in the Service Payment. RTD takes the risk on Discriminatory Change in Law.

9 PROJECT COMMERCIAL MATTERS

9.1 DISPUTES/CLAIMS/CURRENT PROJECT ISSUES

9.1.1. There is one significant residual construction matter relating to the design of level crossings resulting in a dispute concerning Change of Law. DTP, on behalf of the D&B JV, claimed relief for a Change in Law under the Concession Agreement in relation to delays and changes dealing with the Federal Railroad Administration (FRA) and Colorado Public Utilities Commission (CPUC). The specific issues are:

- The redesign of crossing gate timings to account for bicycles;
- The implications of applying the Fixing America's Surface Transportation (FAST) Act which was signed into law on 4 December 2015; and
- The refusal of the CPUC to permit DTP and RTD from removing crossing guards in September when the FRA granted its 5-year waiver.

9.1.2. This impacted the operational A line and delayed the opening of the G Line, which originally was scheduled to commence operations in October 2016 but eventually opened in April 2019.

9.1.3. Positive Train Control and the wireless technology that operates the level crossings is at the very heart of the current dispute and litigation. The issue relates to whether the Project was being unfairly treated by the regulators i.e. the Federal Railroad Administration (FRA) and Public Utilities Commission (PUC) and if the regulators were requiring the level crossings to comply to a different standard than other railroads.

9.1.4. Specifically, the mandated warning time is for railroad level crossings not to close less than 20 seconds prior to the train approaching - however the regulators wanted the crossings to be more uniform (for example 30 seconds for each activation). The regulators could not understand that due to dwell times at stations, operator handling, weather conditions etc. that not all activations could be 30 seconds prior to the train coming but they would always be more than 20 seconds. Due to this issue the G Line final testing, the final implementation of optimisation and Fast Acts changes were not completed. Whilst DTS and the regulators worked through these issues, the regulators mandated crossing attendants on all level crossings until the regulators had approved the crossings.

9.1.5. DTS believes delay costs and costs of crossing attendants would be Discriminatory Change in Law and/or Force Majeure under the Concession Agreement. The Dispute Resolution Panel under the Concession Agreement found in DTS's favour, however, the client RTD did not accept this, which resulted in the litigation which was due to be in court on 21 September 2020. This matter is ongoing however we would note that the D&B JV's claim is for in excess of $100m, however DTP remains insulated from the litigation since this was a risk passed down to the D&B JV.

9.1.6. Whilst the litigation continues, the issues that led to the issuing of the waivers have now been addressed.

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