

August 26, 2019

To: His Worship the Mayor
And Members of City Council

Re: Public Safety and Traffic Delay – Grade Rail Crossings on Ring Road between Winnipeg Street and McDonald Street

RECOMMENDATION

**RECOMMENDATION OF THE EXECUTIVE COMMITTEE
- AUGUST 7, 2019**

- 1) That Administration be directed to pursue rail relocation of the at-grade rail crossings on Ring Road as outlined in this report.
- 2) That Administration bring a financing plan forward to City Council for consideration to fund the preliminary design through the 2020 budget process.
- 3) That Administration be authorized to explore, negotiate and enter into a third-party funding (if available) agreement for the preliminary design and/or subsequent phases.
- 4) That the City Clerk be authorized to execute the necessary agreement upon review and approval by the City Solicitor.
- 5) That item CM18-7 be removed from the City Council outstanding items list.
- 6) That Administration first secure the cooperation of CN Rail and CP Rail by way of a Memorandum of Understanding or Letter of Intent and seek avenues for project funding, including the Federal Government and Provincial Government.

EXECUTIVE COMMITTEE – AUGUST 7, 2019

The Committee adopted a resolution to concur in the recommendation contained in the report after adding recommendation #6 as follows:

That Administration first secure the cooperation of CN Rail and CP Rail by way of a Memorandum of Understanding or Letter of Intent and seek avenues for project funding, including the Federal Government and Provincial Government.

Recommendation #7 does not require City Council approval.

Mayor Michael Fougere, Councillors: Sharron Bryce (Chairperson), Lori Bresciani, John Findura, Jerry Flegel, Bob Hawkins, Jason Mancinelli, Joel Murray, Mike O'Donnell, Andrew Stevens and Barbara Young were present during consideration of this report by the Executive Committee.

The Executive Committee, at its meeting held on August 7, 2019, considered the following report from the Administration:

RECOMMENDATION

- 1) That Administration be directed to pursue rail relocation of the at-grade rail crossings on Ring Road as outlined in this report.
- 2) That Administration bring a financing plan forward to City Council for consideration to fund the preliminary design through the 2020 budget process.
- 3) That Administration be authorized to explore, negotiate and enter into a third-party funding (if available) agreement for the preliminary design and/or subsequent phases.
- 4) That the City Clerk be authorized to execute the necessary agreement upon review and approval by the City Solicitor.
- 5) That item CM18-7 be removed from the City Council outstanding items list.
- 6) That this report be forwarded to the August 26, 2019 meeting of City Council for approval.

CONCLUSION

The goal of the Ring Road Rail Crossing Feasibility Study (Study) was to identify possible solutions to removing the Canadian National Railway (CN) and Canadian Pacific Railway (CP) at-grade crossings on the Ring Road and to understand the impacts on safety and level of service, as well as many other factors. In addition to the primary goal, possible solutions, which explore rail relocation also considers the implications of re-routing train traffic.

To quantify the impacts and recommend a specific solution, a cost-benefit analysis to examine the costs, impacts and opportunities of various solutions has been completed. In addition to capital construction costs of any solution, the cost-benefit analysis considered accident cost savings, travel time savings, construction delay costs, vehicle operating costs, emission cost savings, as well as operation and maintenance costs.

All the above impacts were monetized over a study period of 40 years. The approach of the cost-benefit analysis follows best practices from Transport Canada, as well as the US Department of Transportation.

Based on the analysis, the recommended solution is rail relocation of both the CN and CP rail lines to a joint operating corridor, the K-Lead Spur line in the Ross Industrial Area. The recommended solution results in the identified benefits being greater than the anticipated costs (shown in Appendix A as having a value greater than one). The cost-benefit calculation includes the aspects identified above. The solution provides:

- Minimal impacts to traffic flow during construction resulting in reduced driver frustration.

- Relocation of the existing CP rail line from its existing alignment, which is away from existing and future residential neighbourhoods.
- Removal of a below standard crossing angle at Winnipeg Street.
- Opportunity for rail connections to future industrial development along the new rail corridor.

It is recommended that Administration pursue this solution as per the draft project plan in this report subject to budget approval. To begin this work, Administration is recommending that a financing plan be brought forward to City Council through the 2020 budget process for consideration of:

1. Funding the engagement of an engineering consultant to complete the preliminary design of the recommended solution.
2. Funding for additional staff required for the project.

BACKGROUND

In the 1980's, as part of the City of Regina's (City) Rail Relocation Initiative, the City applied to the Canadian Transport Commission for a decision to relocate the CN Marshalling Yard, CN Central Butte, CN Craik, CN Qu'Appelle and CP Lanigan Subdivisions to a corridor around the north side of the city. An affirmative decision was handed down in 1987; however, a combination of lack of funding and other factors resulted in the City withdrawing the pursuit of the relocations. Subsequent discussions in the late 1980's and early 1990's to facilitate a compromise with both CN and CP to relocate both subdivisions within the city limits to a joint operating corridor were unsuccessful at that time.

At the City Council meeting on February 25, 2018, a Notice of Motion MN18-3 was introduced for consideration and discussed at the subsequent meeting of City Council on March 26, 2018. The discussion resulted in report CM18-7 on April 30, 2018, directing Administration to complete a Study on the removal of the at-grade rail crossings on Ring Road between Winnipeg Street and McDonald Street.

A Request for Proposals was issued on June 28, 2018 and the Study was awarded to HDR Corporation Inc. (HDR) on August 14, 2018. The scope of the project was to look at all possibilities to remove the at-grade crossings, including grade separation and rail relocation and to provide a recommendation informed by a cost-benefit analysis.

DISCUSSION

The conclusion of the Study and a decision to continue further with preliminary design should be weighed appropriately against the financial, strategic and policy considerations discussed in greater detail in the sections below.

The recommended solution or other feasible solutions to remove the at-grade crossings will ultimately require a financial plan and need to consider balance of other priority work, service levels and affordability for the citizens of Regina. A comparison table of the four main options is provided in Appendix A. A brief synopsis of the options is as follows:

Grade Separation

HDR identified two feasible grade separation options to explore, which were analyzed to identify impacts, if any, to the Winnipeg Street Bridge Replacement Project and to determine initial Class V cost estimates.

Both grade separation options would result in the longest period of construction along Ring Road and Winnipeg Street consisting of several years of traffic accommodations, reduced speeds and restricted movements when compared with rail relocation options. Traffic would also be disrupted during any future maintenance activity on the bridges.

The lowest cost grade separation option is estimated to cost \$106M and would result in the complete removal of the Winnipeg Street Bridge. Ring Road would be bridged over both rail lines, as well as Winnipeg Street. Winnipeg Street would be lowered to the approximate elevation of the current Ring Road. This construction could not be staged and all funding would need to be in place before the project could begin. There is an added risk as the Winnipeg Street Bridge is due for replacement and additional safety measures may need to be taken to maintain the bridge until such time that the full project could begin.

The second grade separation option is to have Ring Road go under both rail lines and Winnipeg Street. This option has little impact on the Winnipeg Street Bridge and the current replacement project could proceed as planned. This option is approximately \$35M more costly than the lowest cost grade separation option.

The City will receive \$19.6M in funding from the provincial and federal governments for the replacement of the Winnipeg Street Bridge through the recently approved recommendations to execute the Amending Contribution Agreements with the provincial and federal governments to finance this project through report CR19-63. If there was a significant scope change, there is a risk that the funding would be lost and any money already spent on the Winnipeg Street Bridge Replacement Project would be solely the City's responsibility to finance.

Rail Relocation

HDR developed five rail relocation options with various sub-options. These sub-options included a combination of a rail relocation and a grade separation. HDR facilitated a meeting with Administration to review the rail relocation options and determine which options would move forward to engage with the railway companies. Rail relocation requires full support of both rail companies in order to be successful.

Due to cost and rail operation implications, the decision was made to try to utilize existing rail corridors within the Ross Industrial Area. Other options to relocate the rail lines further to the east were eliminated due to technical constraints with respect to Transport Canada guidelines and increased costs. Additional options, which included a combination of rail relocation with grade separations were explored but are more costly than strictly rail relocation and were only examined further as options to mitigate risk if the rail companies were not supportive of rail relocation and joint operations on the K-Lead Spur line.

The K-Lead Spur line is a joint operating corridor shared by both CN and CP to service customers in the Ross Industrial Area. Two of the rail relocation options utilize this existing

corridor, which would require upgrades to handle the increased traffic flow and higher track speeds. A second track would also need to be constructed to allow for through rail traffic, as well as traffic to service the customers along this corridor simultaneously. The primary difference in the two options utilizing this corridor is the location of the east to west CP track. One option runs directly south of the Somerset development area, while the other option runs north of the Somerset development area.

The option that runs south of Somerset is anticipated to be less costly by \$20M at an estimated \$86M, which is due primarily for the fact that the City owns the land directly north of the Co-op Refinery Complex (CRC) property and there would be minimal land purchase required for this option. The option north of Somerset development may provide for industrial development adjacent to the new track to have improved access to rail transportation. By relocating north of the Somerset development, it allows the proposed development to connect to adjacent communities. This option would also remove the North Winnipeg Street grade crossing with the CP Lanigan Subdivision that poses additional safety risk due to its crossing angle and potential non-compliance with the recently updated Transport Canada Grade Crossing Regulations. Lands north of Somerset are outside of city limits.

Recommended Solution

Rail relocation of both rail lines to the K-Lead Spur line and north of the proposed Somerset development is the recommended option as shown in Appendix B. The cost estimate for this option is \$107M and takes into consideration, the engagement and feedback, from both rail companies and their requirements to relocate to the proposed route and maintain current operations. This cost estimate provided is a Class 4 with an accuracy of +50 per cent to -30 per cent, meaning it is subject to further refinement through the preliminary and subsequent detailed design to refine the level of accuracy. The cost estimate is provided in 2019 dollars and may be subject to inflationary increases.

The recommended solution may change as further work is advanced through a preliminary design to detail the route selection, perform geotechnical, utility and environmental analysis, undertake a broader stakeholder consultation and acquire land where required. This work is in addition to ongoing conversations with both rail companies. Potential changes as a result of preliminary design to the recommended solution could result in modifications to the route and costs.

To date, both rail companies have engaged in several meetings with HDR to review and provide feedback regarding the proposed rail relocation concept. The feedback received to date has included potential impacts to railway operations, including potential infrastructure requirements or modifications to the conceptual plan to help mitigate those impacts. As part of this Study, HDR continues to work with the rail companies in addressing their comments and is working towards receiving letters of support from both CN and CP for the recommended solution. If the rail companies do not ultimately agree to either the recommended rail relocation option or another relocation option, grade separation would be the only remaining solution for the City to pursue.

There are potential implications that may either require or accelerate planned grade separations crossing the joint operating corridor, specifically where the joint operating corridor crosses the McDonald Street/Highway No. 46 corridor and Ross Avenue.

This would require additional capital funding in addition to operating and maintenance funding for addition bridges along these corridors. Additional work will need to be completed internally to identify if the increased rail traffic along the new rail corridor will expedite future planned grade separations.

The proposed route for rail relocation will be explored in more detail during the preliminary design phase of the project and will identify areas for land acquisition, crossings of third-party infrastructure and relocation or reconfiguration of City infrastructure.

Next Steps

Due to the scope and scale of continuing to advance this as a project, Administration recommends a project team be created internally and remain intact for the duration of the entire project to ensure continuity, especially with respect to conversations and negotiations with the rail companies. Not creating and maintaining a project team to manage the project through preliminary design to construction risks delays and relationships with key stakeholders. The project team will be responsible for managing all required engineering/construction contracts, continuing and expanded stakeholder engagement and seeking and acquiring funding from higher levels of government through existing or future grant programs, among other things.

The entirety of the project to completion of construction is estimated to take approximately eight years. A high-level project schedule with a start date aligned with the recommendation of Q1 of 2020 is attached in Appendix C. There may be opportunities to realize efficiencies in the timeline; however, several of the timeline items require collaboration with external parties; therefore, carry more risk to the timeline. A key assumption is that the time frame assumes the City will be able to continue to fund the work through the entirety of the project. Recognizing the financial options discussed further below, a discussion through the budget process and ongoing exploration of funding programs as the project progresses is anticipated to facilitate the project timeline shown.

The additional staffing capacity required for the project will need to be explored internally and additional FTEs are anticipated to be required to ensure that this project does not jeopardize other initiatives and services provided in Administration's work plans.

RECOMMENDATION IMPLICATIONS

Financial Implications

The City currently has several competing priorities requiring significant investments. Bringing a financing plan to the 2020 budget process ensures that the financial implications and risks associated with progressing this project forward are fully presented to City Council.

The first step in the financial plan of the overall project is the cost of the preliminary design, the FTEs required for project start up and exploration to secure external funding, which will be approximately \$2M. This estimate will be included in the financing plan brought forward to the

2020 budget process. The draft project plan in Appendix C identifies project delivery funding identified and secured at the same time as preliminary design; however, risks associated with not having a financial plan for the project in its entirety are discussed in the options below.

Options identified to fund the next stage of this project include:

<p><u>Option 1 (Recommended):</u> Consideration of funding the preliminary design through the 2020 Capital Budget process allows City Council to explore funding this project through either:</p> <ul style="list-style-type: none"> - A mill rate increase. - A reduction in another budget item. - A withdrawal from the General Fund Reserve (GFR), described more in detail in Option 2. 	<p><u>Risks:</u></p> <ul style="list-style-type: none"> • At this time, a financial plan to fund the entirety of the project, regardless of the solution pursued, is not secured. • Support from other levels of government is desirable for a project of this magnitude. • The risk to fund \$2M for the preliminary design is it may be lost if a financial plan is not identified to deliver the entire project if not secured. • There is a risk that without the preliminary design work completed, the City may not be able to demonstrate readiness for securing funding from other levels of government through future grant application opportunities.
<p><u>Option 2:</u> Should City Council wish to proceed immediately and not wait for the 2020 Budget, the preliminary design could be funded through a withdrawal from the GFR.</p> <p>The GFR had a balance of \$23.5M at the end of 2018, just over its minimum limit of \$23M. The GFR balance is projected to decline below its minimum limit to \$15.4M at the end of 2019 due to planned funding commitments and expenditures, including a \$2.4M commitment related to the Regina Humane Society and \$3.8M for the Parks & Facilities Yard Development. The GFR provides City Council the greatest flexibility to respond quickly to emergencies or to capitalize on opportunities without borrowing.</p>	<p><u>Risks:</u></p> <ul style="list-style-type: none"> • The risk associated with transferring funds from the GFR to progress the next stage of this project reduces the flexibility of being able to use the GFR to respond quickly to emergencies or to capitalize on opportunities. • The risk to fund \$2M for the preliminary design is it may be lost if a financial plan is not identified to deliver the entire project if not secured. • There is a risk that without the preliminary design work completed, the City may not be able to demonstrate readiness for securing funding from other levels of government through future grant application opportunities.
<p><u>Option 3:</u> Defer initiation of the preliminary design until either an external funding source can be secured for this stage or more certainty around how the total project cost of approximately \$107M can be funded is identified. This next stage of this project may be eligible for the Gas Tax Funding expected later in 2019. Administration would explore the eligibility of this project to receive this funding prior to the initiation of the preliminary design stage.</p>	<p><u>Risks:</u></p> <ul style="list-style-type: none"> • There is a risk, that no external source of funding to finance \$2M for the preliminary design may be available for the City to initiate the work in the near future. An extended delay also risks loss of momentum to advance a rail relocation project with CN and CP. • There is also a risk that without the preliminary design work completed, the City may not be able to demonstrate readiness for securing funding from other levels of government through future grant application opportunities.

In any of the above scenarios, Administration would seek to identify external funding sources to offset the cost of the preliminary design either in whole or in part to offset financial impacts to the City.

Environmental Implications

None with respect to this report; however, the preliminary design will need to explore and identify potential environmental implications, subsequent environmental impact studies and permits that may be required.

Policy and/or Strategic Implications

Strategically, the completion of a preliminary design for the recommended solution is considered advantageous and is recommended to demonstrate the City's commitment to the project, both to key stakeholders and sources of external funding.

For key stakeholders, such as CN and CP, this will need to be coupled with a financial plan to ensure the project can continue through to completion. City policies provide guidance towards the decision around this commitment.

The City's *Design Regina: The Official Community Plan, Bylaw No. 2013-48* (OCP), identifies in Section B, Financial Policy, Goal 2 – Sustainable Services and Amenities, policy 1.5 states:

“Provide infrastructure that meets expected growth and service levels, in accordance with financial resources and capabilities”.

The implementation of the recommended or alternative solution improves the level of service along Ring Road in terms of traffic delays at this location and considers future capacity improvements as a result of forecasted growth. The decision to consider advancing this project further should consider the timing of financial resources available along with competing priorities requiring funding to improve the level of service.

Similarly, the City's Strategic Plan relates to the advancement of this project by considering the Community Perspective Objective 2: Improve Service Financial Sustainability – Ensure the community has services today and in the future that meet everyone's needs at a price they can afford.

Within the City's Transportation Master Plan (TMP), the Roadways Network Map identifies future potential railway grade separation locations within the city, including the subject location of the motion. The action to initiate a Railway Study contemplates several rail related items, including existing crossings and rail relocation. Undertaking a Study accelerated and advanced a portion of work identified in the TMP. Continuing with the next steps outlined in this report will continue to advance this work.

Other Implications

Traffic and Train Volumes

Currently, 64,000 vehicles per day travel between Winnipeg Street and McDonald Street along

Ring Road as per the 2017 – 2018 Annual Traffic Flow Map. As of 2013, the CP Lanigan subdivision crossing was reported to have up to 10 trains per day. The CN Qu'Appelle subdivision crossing was reported to have up to six trains per day. Recent train crossing data provided by CN and CP indicate that the overall number of crossings has decreased since 2013.

CP also indicated there is an average of four to eight trains per day and CN indicated there is an average of two freight trains per day at these crossings respectively. According to both CN and CP, the number of trains can change at any time, depending on the needs of their customers. Both entities operate 24 hours per day, seven days a week and do not have a set schedule for the freight trains.

Both rail relocation and grade separation will eliminate the vehicle/train interaction on Ring Road. Rail relocation is estimated to reduce the vehicle/train interaction by 42 per cent compared to the current scenario. Grade separation is estimated to reduce the interaction by 53 per cent. The difference between the rail relocation versus grade separation is due to increased train traffic along the relocated corridor. The resulting total reductions consider the crossings at Winnipeg Street (two locations), 9th Avenue North, McDonald Street, Turvey Road, Sioux Street and Ross Avenue as a result of the CN and CP tracks impacted.

Collisions

As reported in report CM18-7, at the CN and CP at-grade crossings over the last 10 years (from 2009 to early 2018), there has been eight separate collision cases, as reported by Saskatchewan Government Insurance. In some of these cases, there were multiple vehicle collisions. Severity ranged from property damage to injuries. The determined causes included driver inattention, driver impairment and weather-related road conditions.

The above data outlines collisions at the CN and CP at-grade crossings locations specifically. A larger total number of collisions have occurred between Winnipeg Street and McDonald Street on Ring Road; however, the collision data is not separated between non-train related collisions and train related collisions at the time of the incident. Further analysis may be required to determine correlations between collision and train crossings, cause, severity, road conditions and other factors. An analysis is anticipated to be hampered by available data to correlate the collisions with the historical timing of train crossings.

Land Use Planning

The recommended solution results in the removal of the CP rail line currently located between the existing Uplands area and Kensington Greens development and approved concept plan for the Somerset development. The recommended solution considers the removal to be of benefit to the surrounding residential developments but a review may be required to amend the infrastructure, road network and land use planning not yet developed. The recommended solution also relocates rail to lands outside of city limits, which will require both acquisitions, as well as consultation with the Rural Municipality of Sherwood No. 159.

Accessibility Implications

None with respect to this report.

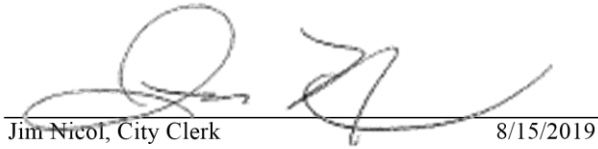
COMMUNICATIONS

Stakeholder engagement for the Study was limited to CN and CP. Ongoing consultation and communication with affected stakeholders including, but not limited to CN and CP will be required throughout the project.

DELEGATED AUTHORITY

The recommendations contained in this report require City Council approval.

Respectfully submitted,



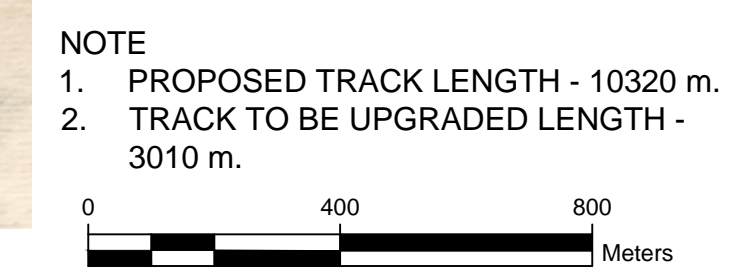
Jim Nicol, City Clerk 8/15/2019

Appendix A

	Rail Relocation		Grade Separation	
Description	CP & CN relocation, Outside Somerset area **Recommended**	CP & CN relocation, Below Somerset Area	Ring Road over CP & CN	Ring Road under CP & CN
Estimated Cost ⁽¹⁾	\$ 107 M	\$ 86 M	\$ 106 M	\$ 141 M
Effect on Winnipeg Street Bridge Project	None.	None.	<ul style="list-style-type: none"> Winnipeg Street Bridge removed. Potential for funding loss. 	Winnipeg Street Bridge project can proceed.
Construction Impacts	Minimal impacts to traffic flow during construction.	Minimal impacts to traffic flow during construction.	Major impacts to Ring Road traffic flow. Significant delays expected for duration of construction. Traffic delays anticipated for over two years.	Major impacts to Ring Road traffic flow. Significant delays expected for duration of construction. Traffic delays anticipated for over two years.
Community Impacts	<ul style="list-style-type: none"> Somerset development not separated by rail from Uplands and Kensington Greens. Removal of below standard crossing of CP at Winnipeg Street N. Provides opportunity for rail connections to future industrial development along new rail corridor. Relocates rail traffic away from residential areas. 	<ul style="list-style-type: none"> Requires change to southern end of Somerset development. Provides opportunity for rail connections to future industrial development along new rail corridor. Maintains mainline rail traffic between residential areas. 	<ul style="list-style-type: none"> Does not impact rail companies' existing operations. Loss of grant funding from federal and provincial governments for replacement of Winnipeg Street bridge. 	<ul style="list-style-type: none"> Does not impact rail companies' existing operations.
Cost Benefit Ratio ⁽²⁾	1.32	1.62	0.89	0.71

(1) Estimated costs shown are in 2019 dollars and are a Class 4, +50%/-30% as per AACE International Cost Estimate Classification System 17R-97

(2) The Cost Benefit Ratio assumes a study period of 40 years.



HBR

ISSUED FOR
REVIEW

FILENAME		DRAWING
SCALE	1:12,000	

Regina Rail Relocation Project Schedule

Task	Duration	2020				2021				2022				2023				2024				2025				2026				2027				2028	
	Year	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2				
Project Start-Up	0.75																																		
Create internal project team	0.75																																		
Develop Project Scope	0.75																																		
Negotiation with CP and CN	0.75																																		
Issue RFP and Select Consultant	0.25																																		
Negotiation with External Stakeholders	0.5																																		
Negotiation with Internal Stakeholders	0.5																																		
30% Design	2																																		
Option Evaluation	0.5																																		
Detailed Route Selection	0.5																																		
Geotechnical Investigation	0.25																																		
Survey	0.25																																		
Land Acquisition	2																																		
Public Consultation	1.75																																		
Utility Investigation	1.5																																		
Environmental Assessment	1.5																																		
Permitting	1.5																																		
CN/CP Mainline/Switching Operation Plan	1																																		
Mainline Track 30% Design	1																																		
All Connection Track 30% Design	0.5																																		
CN/CP Track 30% Design Approval	0.25																																		
30% Drawing Package	0.25																																		
Class 3 Cost Estimate	0.25																																		
Project Funding	2.25																																		
Identify Funding Sources																																			
Obtain Funding																																			
Detail Design	2																																		
Mainline Track Detail Design	2																																		
All Connection Tracks Detail Design	1																																		
Crossing Design	0.5																																		
Signal Design	1																																		
Land Acquisition	2																																		
Public Consultation	2																																		
Utility Crossing Relocation/Protection Design	2																																		
Utility Crossing Agreements	2																																		
Environmental Assessment	2																																		
Permitting	2																																		
CN/CP Agreements	0.5																																		
Issued for Review Drawing Package	0.5																																		
Issued for Review Drawing Package	0.25																																		
Issued for Construction Drawing Package	0.25																																		
Class 1 Cost Estimate	0.25																																		
Project Delivery Model Selection	0.5																																		
Select the Delivery Model	0.5																																		
Select Owner's Engineer	0.5																																		
Selection Construction Manager	0.5																																		
Construction Administration	3																																		
Construction	3																																		
Track Cut Over	0.25																																		
Total	8.25																																		