



Canadian
Transportation
Agency

Office
des transports
du Canada

Guide to Railway Charges for Crossing Maintenance and Construction 2016

Effective July 1, 2016

**Analysis & Regulatory Affairs Directorate
Analysis & Outreach Branch**



Making Transportation Efficient and Accessible for All

This document and other Canadian Transportation Agency publications are available on our website at www.otc-cta.gc.ca.

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Introduction

The Canadian Transportation Agency (Agency) is responsible for, among other duties, resolving disputes or facilitating the resolution of disputes related to railway crossings, as they arise between federal railway companies and other interested parties such as utility companies, road authorities and landowners.

Under section 101 of the *Canada Transportation Act* (CTA), railway companies, road authorities, utility companies and landowners may negotiate agreements for any aspect of a crossing. These agreements usually include rates to be charged for work performed, and specify which parties are responsible for paying for this work. Where agreements cannot be reached by the parties, the Agency, upon receiving an application, may resolve issues relating to the construction, maintenance and apportionment of costs of road and utility crossings.

This Guide has been developed **to assist** the railway companies, road authorities, utility companies and landowners, by providing a third-party assessment of rail costs, and setting consistent, nation-wide schedules and guidelines for work performed by railway companies. This guide **may be used** by Canadian federal railway companies when charging for work performed at crossings, crossing warning systems, or for any other crossing-related work either agreed to by the parties or authorized by an order of the Agency.

The rates in the attached schedules are developed from Class I railway accounting data in accordance with the principles, methods and procedures established for the costing of Class I railway operations for regulatory purposes. They have been developed to provide a guide to the parties involved in a railway crossing agreement on the total costs incurred by Class I railway companies for work and services performed at road crossings.

Application

Parties are encouraged to negotiate contracts which incorporate:

- specifications;
- rates;
- time frames; and
- the terms and conditions of any crossing-related work.

In the event of a dispute, the Agency will assess the merits of the case and determine whether the rates in this Guide apply. Furthermore, these rates may apply, from the effective date of this guide, to any past orders issued by the Agency's predecessors.

As indicated above, the rates in this guide are developed from Class I railway accounting data to represent their total costs and therefore:

- may not accurately reflect the costs incurred by non-Class I railway companies; and
- do not take into consideration any costs related to crossing maintenance and construction that are incurred by parties other than the railway companies.

The rates contained in this guide fall into two categories:

1. scheduled maintenance rates (Schedule A) which cover routine maintenance of crossing warning systems; and
2. general billing guidelines (Schedules B to E) which cover construction and unscheduled maintenance projects, and crossing surface maintenance, based on the actual activities performed.

Category 1: Billing guidelines for scheduled maintenance of crossing warning systems (Schedule A)

Applicable railway crossing projects

The charges in this section apply only to scheduled maintenance of crossing warning systems. Scheduled maintenance is the standard preventative maintenance which is intended to ensure the reliable and safe operation of a crossing warning system. The scheduled maintenance rates cover all labour, material, vehicle costs and overheads associated with ensuring the functional operation of a crossing warning system. A breakdown of the rates to be charged for each category is contained in [Schedule A](#).

For the purposes of this guide, and to better reflect the costs involved, scheduled maintenance rates have been divided into two categories: **crossing warning systems with gates (Type 1)** and **crossing warning systems without gates (Type 2)**. No scheduled maintenance rates are to be charged for crossings having only passive warning systems such as reflectorized signboards.

This section addresses the following cost components:

- direct labour rates;
- direct material rates;
- electricity costs;
- overhead rates;

- vehicle costs; and
- billing periods.

Direct Labour Rates

The scheduled maintenance labour rates include the labour costs associated with all routine service calls and maintenance work, and scheduled testing and inspections. The labour portion of the work has been divided into two categories: work performed by signal maintainers, and work performed by track and roadway crews.

The work performed by signal maintainers includes regular service calls and inspections, and painting and parts replacement, as well as all scheduled safety tests, which comprise weekly, monthly, 3-month, 6-month, 1, 2, 4, 8 and 10-year tests.. The work performed by track and roadway crews includes: weekly testing in place of signal maintainers (for certain regions of the country); flagging during routine maintenance; and the replacement of insulated joints and temporary bond wires.

Weekly tests are performed on all crossing warning systems across Canada where railway companies operate. In some regions, these tests are performed by the signal maintainers and in other regions, by the track and roadway crews. The system-wide time spent on the weekly tests has been apportioned between the two labour groups.

The base labour rate is calculated for both signal maintainers and track and roadway crews by dividing the total dollar amount paid to employees in each labour category by the total hours worked in the same labour category. The amount paid includes straight time, vacation, statutory holidays, overtime and other pay-related benefits as well as a standby charge.

Direct Material Rates

The scheduled maintenance direct material rate covers the costs associated with the replacement of basic material items, including paint, batteries, and light bulbs, as well as any other material components replaced due to normal wear. This rate also covers any additional charges for the replacement of materials such as masts, cantilevers, gates, etc. due to normal wear.

The basic material cost includes the total material items purchased for crossing maintenance.

Electricity Costs

The electricity cost includes the base cost of electricity supply and consumption required to maintain the operation of a crossing warning system. No material overhead is added to the electricity costs.

Overhead Rates

In addition to the direct costs of labour and material, the railway company also incurs overhead costs related to planning, supervision, and administration of the maintenance activity, as well as administration costs of the railway company as a whole such as accounting, finance, human resources, legal, management services and information systems. The overheads also includes an employee benefit allowance to cover costs relating to the company's portion of employment insurance, pensions, health plans, and other employee benefits.

An extensive review of the activities performed by railway companies to construct or maintain railway crossings was conducted after the update of the Guide in 2013. The review examined activities performed in scheduled maintenance, unscheduled maintenance, crossing surface maintenance, and construction, of railway crossings (see General Billing Guidelines section). The results of the review are overhead rates that better reflect the work involved in the maintenance of crossings. A description of the overheads included in the overhead rate for scheduled maintenance can be found in the Overhead Summary section.

The scheduled maintenance overhead rates are calculated using the Agency's costing model and are applied to the labour and material used in the maintenance project. The labour overhead rate is applied to the hours of direct labour employed in the project, and the material overhead rate is applied to each of the material items used in the project.

Vehicle Costs

Vehicle costs incurred for transportation of signal maintainers and track & roadway crews to and from crossings to perform the scheduled tests are also included as part of the scheduled maintenance rates. Vehicle costs are developed using a per hour rate which reflects the costs of ownership and maintenance of these vehicles multiplied by the number of hours the vehicle is used for scheduled maintenance purposes.

Billing Periods

The rates have been presented, for convenience, on an annual basis. Parties to a crossing agreement for scheduled maintenance are free to negotiate the frequency and timing of billing periods (e.g. monthly or annually) that best meet their needs.

Category 2: General billing guidelines

Applicable Railway Crossing Projects

The general billing guidelines apply to all work at crossings except for scheduled maintenance of crossing warning systems. Charges under the general billing guidelines should be billed separately from any scheduled maintenance charges and should include a full description of the actual work performed and the related charges. The general billing guidelines include three types of projects:

- construction;
- crossing surface maintenance; and
- unscheduled maintenance

The charges relating to all three categories can be found in Schedules B through E of this guide.

Construction

Construction projects which are captured under the general billing guidelines are:

- the initial construction, reconstruction or upgrade of a grade crossing, including the crossing surface and/or the installation of the associated crossing warning system;
- the initial construction, reconstruction, or upgrade of a grade-separated crossing (no crossing warning system required); and
- the initial construction, reconstruction, or upgrade of a utility crossing (no crossing warning system required).

Crossing Surface Maintenance

Maintenance performed by a railway company on the crossing surface of a grade crossing or on a grade separation is not included in the standard maintenance rates. Any such costs incurred by the railway company are captured under the general billing guidelines.

Crossing surface refers to planking, pavement or other suitable material placed between the rails and to the ends of the ties for the full width of the road crossing. Crossing surface can be made of lumber, asphalt, concrete, rubber, or other elastomeric material.

Damage to the crossing surface can occur due to weather, accidents, scraping by snow ploughs, hits by low ground clearance heavy vehicles, and normal wear and tear over the years. Surface abrasion increases with traffic levels, and the impact loads imposed by vehicle tires transitioning from rail to crossing surface. Cracking can develop in surface material, and wood crossing surfaces are also subject to rot and splitting. The railway company responsibility for performing the maintenance and repair of crossing surfaces may include such work as filling potholes, removing/replacing defective or worn panels, patching, etc.

Unscheduled Maintenance

Unscheduled maintenance refers to corrective work on any crossing warning system damaged by accidents, vandalism, or weather, to restore the reliable, safe, and effective operation of the system.

Charges

This section outlines the general billing guidelines as it pertains to:

1. [Labour charges](#);
2. [Material charges](#);
3. [Miscellaneous charges](#); and
4. [Rental rates for railway equipment](#).

Labour Charges

The overall labour rate may include the following components:

- direct labour charge;
- indirect labour factor;
- labour overhead rate;
- contracted labour rate; and
- rate for labour in contracted services

Direct Labour Charge

Direct labour charges are directly related to the labour hours, of railway employees, used in the construction of new or upgraded crossings, or for unscheduled maintenance of the crossings or the maintenance of the crossing surfaces. The labour charges applicable under this guide for any general billing project should be based on the actual hours worked multiplied by an hourly labour rate, as specified in each employee's

collective agreement. For construction purposes, the labour charges are applicable to the actual on-site installation of materials.

Indirect Labour Factor (Schedule B)

The direct labour charge only covers the hourly salaries and wages, for the actual hours worked on the project, of the employees whose costs are billed directly to the road authority. However, the railway also incurs costs related to vacations, statutory holidays, sick leave, and other types of leave, as specified in collective bargaining agreements for those employees. The indirect labour factor covers allowances for these costs, based on railway data showing the hours actually worked and the hours paid by the railway for each employee category, and that factor is applied to the direct hourly wage of railway employees.

Schedule B of this guide outlines the appropriate indirect labour factor to be applied to direct wage rates for labour costs that fall into the general billing guidelines.

Labour Overhead Charges (Schedule B)

The labour overhead rate for construction, upgrade, crossing surface maintenance, or unscheduled maintenance of crossings covers the same types of expenses as described previously for scheduled maintenance of crossings, and is calculated using the Agency's costing model. The overheads are described in more detail in the Overhead Summary section of this Guide.

Schedule B of this guide outlines the labour overhead rate to be applied to direct wage rates for labour costs that fall into the general billing guidelines.

Contracted Labour Rate (Schedule B)

For the construction or upgrade of crossing warning systems, a construction crew comprising railway unionized employees are used in most cases. However, if there are not enough railway employees available for a construction project, contracted labour may be used.

In these cases, the contracted labour is a part of the construction crew, working alongside the railway employees. The review of overheads that was initiated after the 2013 update of the Guide shows that the activities undertaken by the railway to enable and support the construction, such as supervision, rail communications, rail traffic control, etc., encompass both the contracted and railway labour. Therefore, in the construction or upgrade of a crossing warning system, it is reasonable that the contracted labour would incur the overheads that relate to enabling and supporting project. Contracted labour will not incur those overheads relating to employee benefits.

Schedule B of this guide outlines the appropriate overhead rate to be applied to the invoiced contracted labour costs. . To emphasize, this overhead rate is applicable ONLY to the direct cost of contracted labour used as part of the project crew in the actual construction or upgrade of a crossing.

Labour in Contracted Services (Schedule B)

The review of activities undertaken to enable or support railway crossing projects suggests that in special circumstances the railway may contract out specific activities during the construction or upgrade to third parties. For example, digging trenches, locating and moving utilities, drilling and fitting of pipes, etc., could be performed by a contractor as part of the overall project.

Again, it is reasonable that the labour used in performing the contracted part of the project would incur the overheads relating to enabling and supporting the project, such as rail traffic control and rail communication systems, and their associated administrative costs. The overheads related to employee benefits and associated administrative costs would not be applicable to this labour.

Schedule B of this guide outlines the appropriate overhead rate to be applied to the labour portion of contracted services performed as part of the overall project. To emphasize, this overhead rate is applicable ONLY to the cost of labour used by a contractor performing assigned tasks during the actual construction or upgrade of a crossing.

Material Charges

The overall material charge is comprised of two components:

- direct material charges; and
- material overhead rates;

Direct Material Charges

Direct material charges are related to the material used in the construction of new or upgraded crossings, crossing surface maintenance, or unscheduled maintenance of the crossings, including any pre-wired and/or pre-assembled items; and is the actual price (including applicable net sales tax¹) paid by the railway company.

¹ The applicable sales tax credits should be deducted from the sales taxes being paid for the material item.

Material Overhead Charges (Schedule C)

In addition to the direct material charges, a material overhead rate is applied to the actual purchase price paid by the railway company for all material items used in the construction, upgrade, crossing surface maintenance or unscheduled maintenance of a crossing, including pre-wired and/or pre-assembled items. The applied rate covers the same types of expenses as previously described for scheduled maintenance projects, and is calculated using the Agency's costing model.

Schedule C of this guide outlines the material overhead rate applicable to all material charges used in construction, crossing surface maintenance, and unscheduled maintenance projects.

Miscellaneous Charges

Miscellaneous charges cover three types of costs incurred by railway companies in construction of new or upgraded crossings, crossing surface maintenance, and unscheduled maintenance of existing crossings:

- transportation charges for work crews, and equipment to and from the crossing site;
- contract administration fees; and
- meals and lodging allowances paid to work crews for the duration of the construction, crossing surface maintenance, or unscheduled maintenance project.

Transportation Charges (Schedule D)

The transportation charges section in Schedule D of the Guide applies to:

- the transportation by rail of material, roadway machines and other miscellaneous equipment to and from work sites, in a work train, or as part of a revenue train;
- the transportation of roadway machines and other miscellaneous equipment to and from work sites by highway vehicle;
- transportation of employees to and from the project site by highway vehicle; and
- freight cars used for storage of crossing materials or equipment for a project.

Transportation charges for material or equipment in work trains, revenue trains, or highway vehicles cover ownership, and maintenance costs associated with the locomotives and freight cars, or highway vehicles, used in the respective modes of transportation. The charges for work trains and revenue trains also cover operating costs for crew and fuel. For work trains, an additional trackage charge, which covers the costs of ownership and maintenance of the tracks, is applied.

Schedule D lists the hourly charges (or fractions thereof) applicable for the use of railway company locomotives and cars in work trains for transporting equipment or materials to the work site, plus charges for additional locomotives or cars should they be needed. Charges for the use of revenue trains, or highway vehicles in the transportation of equipment are listed on a per mile basis. The per mile rate for highway vehicles is also applicable for the transportation of employees to and from the project site by railway owned vehicles.

A trackage charge is also included in Schedule D to account for the wear and tear on the track from the use of work trains, and the additional freight cars added to revenue trains for the transportation of material or equipment to the project site. In previous editions of the Guide, the trackage charge was presented as a cost per train mile. However, it is noted that ownership and maintenance costs on the track is different for different train sizes. That is, a two-car work train for a crossing-related project would not cause the same track-related costs as a 100-car revenue train. To make the trackage charge more accurate for crossing-related projects, the Agency has re-calculated the trackage charge and presents it on a per car mile basis in this edition of the Guide. The rate per car mile means the road authority will be charged only in relation to the number of cars used in the transportation of materials or equipment, on either a work train or a revenue train, for the crossing construction or maintenance project.

The charges in **Schedule D** do NOT apply to:

- Railway company labour used to transport equipment by highway vehicle; when the labour hours associated with the transportation function are known, the appropriate charge for the labour hours of transportation (direct, indirect, and overheads) are presented in **Schedule B**;
- The use of personal automobiles in the transportation of employees: These charges are billed directly.
- Transportation of railway-owned equipment, other than locomotives, to and from job sites under its own power. **Schedule E** daily rental rates apply in these cases.

Meals and Lodging (Schedule D)

Meals and lodging expenses for railway company employees working on a project under the general billing guidelines are applicable for employees that are entitled to such allowances in their collective agreements. The allowable charges are those that are specifically identified in each employee's collective agreement.

Contract Administration Fees (Schedule D)

This is an administration fee applied to cover the cost of arranging a contract for delivery of materials for a crossing project by a third party, or a contract for performing specific activities in a crossing-related project.

Rental Rates of Railway Equipment (Schedule E)

Where company-owned railway equipment is used for projects that fall under the general billing guidelines, the daily rental rates shown in **Schedule E: Railway Equipment Rental Rates** are applicable.

The rental charges may include the actual time required for moving railway-owned equipment, under its own power or otherwise, from its home base or point of storage to the project site and back again, provided the railway equipment is not being transported directly to the site of another project. If the equipment goes directly from the site of one project to another, the time to move to the first project cannot be applied to the second project.

The applicable methodology is outlined in **Schedule E**.

Summary of Overhead Charges

After the update of the Guide in 2013, the Agency undertook an extensive review of the overhead rates applied to the construction, upgrade, and maintenance of crossing warning systems. The Agency initiated this review to ensure that the overhead rates continue to accurately reflect the costs associated with the crossing related activities.

As part of the review, Agency staff interviewed personnel from CP and CN engaged in the planning and implementation of crossing maintenance and construction projects. Agency staff received descriptions of all the activities, from start to finish, involved in the construction, upgrade, or maintenance of crossing warning systems (process descriptions).

In addition to interviewing the railways, the Agency invited a few select Road Authorities (RAs), and Transport Canada (TC) to comment on the processes described by the railways, allowing them to share their perspective, and experience regarding the processes involved in crossing construction and maintenance.

Based on the review, the Agency has identified the following overheads as appropriate in the construction, upgrade, or maintenance of crossing warning systems, as well as the maintenance of crossing surfaces, which are reflected in the rates found in

Schedule's B and C, and embedded in the rates in **Schedule A**, of this Guide. The descriptions of the overheads are accompanied by processes to which they apply.

Overhead:	Applies to:
Track and roadway administration: the planning and supervision activities to support the railway company's maintenance activities.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
General administration: the accounting, finance, human resources, legal, management services, information systems and other management functions needed to support the railway company's operations.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Dispatching: the dispatching activities to ensure coordination of movements on the track network, control of the project area, and safety of work crews. Dispatching is an overhead on labour only.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Rail communication system expenses: the investment, maintenance, operation and amortization expenses for rail communication systems, which are needed to coordinate movements and ensure safety of the work crews on the project.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Employee benefits expenses: payment of the employment benefits to the employees who work directly on the project or perform the administrative, supervisory and management activities to support the maintenance project, including health and welfare, pensions, Canada and Quebec pension plans, employment insurance, and other employee benefits.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Office buildings expenses: the expenses related to the upkeep of office buildings needed to house the work crews and the administrative, supervisory and management support staff,	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance

including the costs of investments, maintenance, operation and depreciation of the buildings.	- Crossing Surface Maintenance
Material stores: the expenses related to the upkeep, and operation of the facilities in which materials are stored. Material stores is an overhead on materials only.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Shop Overheads: The expenses incurred related to using shops as staging facilities in the construction or upgrade of a crossing warning system. Shops are also used in the wiring of bungalows when those activities are performed by the railway. Shop Overheads apply only to material expenses.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade
Taxes: the costs of municipal property taxes paid on the office buildings.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Insurance: the costs of insurance against injuries to employees and loss, damage and destruction of third-party property.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance
Working capital: interest paid on the working capital needed to sustain day-to-day operation.	<ul style="list-style-type: none"> - Crossing Construction or Upgrade - Scheduled and Unscheduled Maintenance - Crossing Surface Maintenance

The Agency also gathered information regarding the processes surrounding pre-wired or pre-assembled materials, during the review, and have confirmed that the construction overhead for materials are applicable to these materials, like all other materials used in the construction or upgrade of a crossing warning system.

The review made it clear that contracting activities related to crossing projects, specifically, arranging for the pre-contracted supply of material or services for the project, and the associated billing and accounting activities, are difficult to properly estimate as overheads on direct time in the Agency costing methodology. In the

absence of any other information the contract administration rate in previous editions of the Guide is retained (**Schedule D**).

The transportation of company-owned railway equipment to and from the job site can be done by work train (rail) or by highway vehicle (road). In any case where a work train is used, the rates in **schedule D** should be applied. The work train rates have overheads embedded in them, and thus no other overheads should be added. The use of the transportation overhead is limited to transportation by highway vehicle, and is explained fully in the Transportation Charges section.

Salvage Values

Proper credit is allowed for salvaged crossing warning system materials. Crossing warning system materials removed from service for re-use should be salvaged at 60% of current new price, and when used again, charged out at the same percentage. Material such as relays or other apparatus which must be repaired or rebuilt should be salvaged at 25% of the current new price, and when used again after being repaired, charged out at 75% of current new price.

Injury or Death

No direct charges are to be made for payment of compensation claims for injury or death of railway employees on a crossing construction or maintenance project.

Discontinuance of Rail Operations

The provisions of the CTA cease to apply to any crossings on a line once the operation of that line is discontinued pursuant to Division V of the CTA. No maintenance charges are to be billed for crossings on which train and line operations are permanently ceased. Should a railway company temporarily cease operations pursuant to Transport Canada regulations, a reduced scheduled maintenance rate may apply to cover the ongoing fixed maintenance costs.

Renewal

The *Guide to Railway Charges for Crossing Maintenance and Construction* will be reviewed by the Agency on an ongoing basis. More specifically, the Agency intends to update the overhead rates for labour and material on an annual basis (schedules B and C), the workload and accounting data necessary for the production of schedules A (standard maintenance rates) and D (miscellaneous charges) on an bi-annual basis, and the information necessary for the determination of equipment rental rates

(Schedule E) on a tri-annual basis. Once the cost base has been established according to these schedules, the Agency intends to simply price inflate it.

Railway Company Contacts

Canadian Pacific Railway Company

Non Freight Billable Projects
Gulf Canada Square, Suite 600
401 9th Avenue S.W.
Calgary, Alberta
T2P 4Z4
Phone: 403-319-3053
Fax: 403-319-3640

Canadian National Railway Company

Manager Legislative Affairs
953 de La Gauchetière Street West
Montréal, Quebec
H3B 2M9
Phone: 514-399-6416
Fax: 514-399-4296

Definitions

road: includes any way or course, whether public or not, available for vehicular or pedestrian use.

road crossing: that part of a road that passes over, under or across a line of railway and includes any structure supporting or protecting that part of the road or facilitating the crossing.

crossing warning systems: an active system consisting of lights, bells and/or gates used at road/railway crossing intersections to warn the public of the presence or approach of rail traffic.

crossing surface: means the planking, pavement or other suitable material placed between the rails and to the ends of the ties for the full width of the road crossing.

maintenance: work which is required to keep an existing facility in its fully functional condition.

unusual weather-related damage: damage to crossing warning systems due to exceptional forces of nature such as lightning, high winds, extreme temperature and humidity, which are inconsistent with normally expected weather to the local geography.

car mile: one car mile is equal to one mile of track travelled by one freight car. To calculate the total car miles of a train, the number of miles travelled by the train is multiplied by the number of cars on the train.

Agency Assistance

If any party wishes to seek Agency assistance in resolving issues relating to work performed at crossings, an application must be made in writing, include all supporting information, be signed by the applicant and be sent to the Agency at the following address:

Secretary, Canadian Transportation Agency
Ottawa, Ontario
K1A 0N9

If you wish to hand deliver or courier your application, please use the following address:

Secretary, Canadian Transportation Agency
15 Eddy Street, 17th Floor, Mailroom
Gatineau, Québec
J8X 4B3

Fax: 819-997-6727

In addition, a copy of the application should be sent to each other party involved at the same time the application is filed with the Agency.

Schedule A: Scheduled Maintenance of Crossing Warning Systems

Type 1: Crossing Warning Systems with Gates

2016/2017 – Standard maintenance rates: labour costs

	Annual labour hours	Annual labour rate ¹	Labour costs ²
Work performed by signal maintainers	71.6	\$66.39	\$4,754
Work performed by track and roadway crew	9.4	\$49.28	\$462

Note 1: The Labour Rate is calculated by adding a labour overhead rate of 57% to a base labour rate.

Note 2: The total Labour costs are rounded to the nearest dollar.

2016/2017 – Standard maintenance rates: material and electricity costs

Material cost ¹	Electricity cost ²	Total materials ³
\$716	\$311	\$1,027

Note 1: The Material Cost is calculated by adding a material overhead rate of 32% to the basic material cost.

Note 2: No overhead has been applied to the electricity cost.

Note 3: Total Materials is a sum of the material cost and the electricity cost. All costs are rounded to the nearest dollar

2016/2017 – Standard maintenance rates: vehicle costs

Vehicle rate per hour	Total annual hours	Total vehicles ¹
\$14.93	81.0	\$1,209

Note 1: Total Vehicles is calculated by multiplying the total annual hours by the vehicle rate per hour. Total vehicle cost is rounded to the nearest dollar.

2016/2017 – Standard maintenance rates: all costs

Signal maintainers labour costs	\$4,754
Track and roadway crew labour costs	\$462
Total materials	\$1,027
Total vehicles	\$1,209
Total annual rate¹	\$7,452
50% of total annual rate	\$3,726
Monthly rate²	\$621
50% of monthly rate	\$310

Note 1: The total annual rate is the sum of the labour, material, and vehicle costs.

Note 2: The monthly rate is the total annual rate divided by 12.

Note 3: All rates are rounded to the nearest dollar.

Type 2: Crossing Warning Systems Without Gates

2016/2017 – Standard maintenance rates: labour costs

	Annual labour hours	Annual labour rate ¹	Labour costs ²
Work performed by signal maintainers	63.2	\$66.39	\$4,194
Work performed by track and roadway crew	9.0	\$49.28	\$444

Note 1: The labour rate is calculated by adding a labour overhead rate of 57% to a base labour rate.

Note 2: The total labour costs are rounded to the nearest dollar.

2016/2017 – Standard maintenance rates: material and electricity costs

Material cost ¹	Electricity cost ²	Total materials ³
\$620	\$311	\$931

Note 1: The material cost is calculated by adding a material overhead rate of 32% to the basic material cost.

Note 2: No overhead has been applied to the electricity cost.

Note 3: Total materials is a sum of the material cost and the electricity cost. All costs are rounded to the nearest dollar

2016/2017 – Standard maintenance rates: vehicle costs

Vehicle rate per hour	Total annual hours	Total vehicles ¹
\$14.93	72.2	\$1,078

Note 1: Total vehicles is calculated by multiplying the total annual hours by the vehicle rate per hour. Due to rounding, the total vehicle cost is slightly different than the straight multiplication of the vehicle rate per hour and the total annual hours.

2016/2017 – Standard maintenance rates: all costs

Signal maintainers labour costs	\$4,194
Track and roadway crew labour costs	\$444
Total materials	\$931
Total vehicles	\$1,078
Total annual rate¹	\$6,645
50% of total annual rate	\$3,323
Monthly rate²	\$554
50% of monthly rate	\$277

Note 1: The total annual rate is the sum of the labour, material, and vehicle costs.

Note 2: The monthly rate is the total annual rate divided by 12.

Note 3: All rates are rounded to the nearest dollar.

Schedule B: Construction, Crossing Surface Maintenance, and Unscheduled Maintenance Overhead Charges — LABOUR

Cost components to be added to employee's base wage rate to develop labour charges under the general billing guidelines

Cost component	Unscheduled maintenance and Crossing surface maintenance (%)	Construction projects (%)			Transportation ² (%)
		Railway Employees	Contracted Labour	Labour in Contracted Services	
Indirect labour factor ¹	20	20			20
Overhead rate					
Administration: <ul style="list-style-type: none"> track and roadway administration general railway administration 	20	20	18	8	19
Working capital	1	1	1	1	1
Associated costs: <ul style="list-style-type: none"> office buildings taxes insurance rail communication systems dispatching 	11	11	10	10	5
Employee benefit allowance	32	32	5	4	31
Total overhead rate	64	64	34	23	56

Note 1: When charging for work performed by signal maintainers, crossing construction crews, or railway employees used for transportation of equipment, an indirect labour factor of 20% may be added to the direct labour rate as allowed pursuant to their collective agreements. The respective overhead rate is applied to the direct wage rate plus indirect labour factor.

Note 2: The transportation overhead is only applicable to the labour hours (of railway employees) relating to the transportation of equipment, by highway vehicle, when those hours are known. Transportation by work train is accounted for in Schedule D, and an overhead rate is embedded in the rate.

Schedule C: Construction, Crossing Surface Maintenance and Unscheduled Maintenance Overhead Charges — MATERIAL

Cost components of the material overhead rate to be applied to actual material costs under the general billing guidelines

Cost component	Unscheduled maintenance and Crossing Surface Maintenance (%)	Construction projects (%)
Administration: <ul style="list-style-type: none"> • track and roadway administration • general railway administration 	20	20
Working capital	1	1
Associated costs: <ul style="list-style-type: none"> • office buildings • material stores and shop overheads • taxes • insurance • rail communications systems 	7	21
Employee benefit allowance	4	6
Total	32	48

Note: As the Agency cannot identify any material that would be used for the sole purpose of transportation, it has removed the material overhead rate for transportation from Schedule C.

Schedule D: Miscellaneous Charges

Meals and lodging	
Meals and lodging allowance as per each employee's collective agreement.	
Transportation charges	
Revenue trains and hi-railers	\$0.45 per car mile for each car/vehicle serving the project.
Equipment transported by highway	\$0.45 per vehicle mile.
Work Train using one Locomotive and two Freight Cars	\$454 per hour for first 8 hours.
	\$557 per hour for 9th and subsequent hours.
	\$234 per hour per additional locomotive.
	\$8 per hour per additional freight car. Also, hourly rate per freight car for freight cars used as storage.
Trackage charge for work trains or revenue train.	\$ 0.35 per car mile.
Contract administration fees	
Fees for the administration of contracts.	3% on amounts up to \$50,000
	2% on amounts of \$50,000 up to \$100,000
	1% on the excess of \$100,000

Note 1: No overheads are to be applied to the transportation charges listed here. Overheads are embedded in the rates.

Note 2: For the trackage charge, the rate is to be applied to the cars on the revenue train that are serving the project.

Schedule E: Railway Equipment Rental Rates

Category	CP billing code	Description	\$ per day
Rail gang oriented	101	tie adzer, self-propelled	337
	191	cribber/adzer	825
	010	anchor squeezer	103
	011	anchor applicator	380
	012	anchor remover, dual	
	013	anchor spreader, dual	176
	712	anchor cribber	104
	719	plucker, plate/dual	174
	619	plucker, plate/single	
	819	plucker,spike	318
	015	plate pre-gauger	71
	108	tie plugger - chemical	578
	919	spike reclaimer (used on tie and rail)	252
	008	spike puller dual rail	227
	099	spiker,dual/gauger	386
	009	spike driver - multi - dual	387
	017	rail heater	102
	077	rail heater,tug	237
	303	large rail saw	46

Ballast gang oriented	211	ballast regulator	427
	404	snow/switch cleaner	141
	214	ballast broom	
	215	undercutter	1,113
	212	ballast cribber	31
	208	power jack/slewer	25
	913	super gopher (super go-4s)	1,261
	201	tamper	124
	202	tamper, surface	485
	206	tamper, switch/surface/line	1,060
	204	tamper - switch	321
	205	tamper - unimat switch 32 tool	85
	3ca	tamper - mark iii/iv production combo	
Tie gang oriented	102	tie crane	266
	105	tie drill	189
	710	tie inserter/extractor - light	51
	110	tie inserter/extractor - production	377
	014	rail lifter	201
	914	tie plate broom	109
	106	tie spacer	
	577	material handler, cartop lucky	50
	507	material handler, cartop jimbo	746

	103	scarifier	274
	320	stabilizer, track, s/f	
	220	stabilizer, track	458
Power generators	814	light, portable c/w generator	
Cranes	502	crawler crane	267
	503	rail mounted crane <20 ton	438
	512	locomotive crane - 30 ton cap	
	501	wheel mounted rubber tire crane	79
	510	speedswing crane	326
	550	speedswing crane - 360 degree	458
Roadway machines	505	bulldozer	376
	508	gradall/excavator	112
	608	road grader (motor)	192
	506	loader < 3 yard	299
	511	backhoe/loader	115
On-track machines	019	on track material (otm) loader	
	601	car mover, brandt	
	700	motor car	28
Brush cutters / mowers	305	on track mower	74
Snow removal / cleaners	401	blower, snow/jet/skid	234
	406	platform cleaner	24
Vehicles		Light Duty Truck – Leased	77

	Light Duty Truck – Owned	63
	Light Duty Truck – Hirail	85
	1.0 Ton Truck – Hirail – Leased	141
	1.0 Ton Truck – Hirail – Owned	88
	1.5 Ton Truck	98
	1.5 Ton Truck – Hirail	130
	3.0 Ton Truck	78
	3.0 Ton Truck – Hirail	154
	5.0 Ton Truck	102
	5.0 Ton Truck – Hirail	172
	10 Ton Truck	162
	10 Ton Truck – Hirail – Lease	480
	10 Ton Truck – Hirail – Owned	311
	Buses/Vans	47
	Cars	49

With the exception of the vehicle costs, Schedule E is comprised of rates developed from data submitted by Canadian Pacific Railway Company (CP). Canadian National Railway Company (CN) was unable to submit data related to Schedule E, and is therefore excluded. Parties and CN can agree to use the rates in Schedule E, or can negotiate amongst themselves to determine appropriate rate. The Agency has re-introduced vehicle costs to Schedule E. Both CP and CN were unable to submit the required data to update the vehicle rates, and as a result the rates from 2012 have been applied.

Methodology to apply in calculating operation costs

No overheads are to be applied to the rental rates listed above as overheads are embedded in the rates.

Rental rates do not include the costs of operating equipment. Charges for employees operating equipment, equipment supplies and fuel can be charged in addition to rental rates. These labour charges can include the appropriate statutory and other leave, and supervision and administration overheads (see above).

These rental rates apply for each day of 8 hours that the equipment actually works on a project. When more than 8 hours work is performed on any one day by the rented item, additional rental can be charged computed on the basis of an hourly prorate of the per diem rate.