

# **ROAD BADGER**

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**- I T E P -**

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**INTEGRATED TESTING AND EVALUATION PROGRAM**



## O V E R V I E W

ITEP (Integrated Testing and Evaluation Program) has been created by Road Badger to provide end users with an opportunity to evaluate and field-test the equipment.

This program is designed to allow for a direct comparison of road maintenance practices, identifying and documenting the results from applying new technology and methods to practiced methods with conventional equipment. As each municipality's requirements and circumstances may differ, participation in this program will identify on an individual basis the level of benefit to each municipality from utilizing the Road Badger. The program is designed to show versatility with performance in multiple applications, having performed rehabilitation of gravel, cold mix, and dust abatement sections.

The program requires the municipality to compare their current methods and costs to actual completion costs, performance and productivity from utilization of the machine. This documentation will then provide the municipality with information as to the level of benefit, savings and performance attained in their circumstance.

Subsequent review of the completed results can then be used to quantify the necessity of incorporating a machine into the existing fleet, depending on the level of benefit identified. This should be of interest to all parties wishing to explore ways to increase production, reduce current costs and/or improve road maintenance efficiency. Additional environmental benefits may be realized thru identifying these methods that can reduce aggregate consumption, fuel requirements, and emissions.

ITEP allows the end user to evaluate the Road Badger at minimal cost and risk. Aside from the production benefits, Road Badger will rebate \$2000.00 dollars off the program cost for documentation provided by the municipality, detailing the performance results from using the Road Badger over their current methods. It will be the responsibility of the municipality to identify and document the savings and benefits from each application, submitting the details on letterhead to Road Badger for eligibility. A further incentive will be offered to those municipalities who wish to acquire a machine, offering the balance of the program cost (up to 20,000.00 dollars) to be fully credited against the purchase of a machine.

This program will integrate manufacturer and end user, jointly participating to review and discuss the level of performance and benefit identified from incorporating the Road Badger into their road maintenance procedures, for each of the applications performed.

ITEP is presented to end users who have a desire to reduce their current costs of road maintenance, and are willing to explore new technologies, methods and equipment to attain these cost savings.

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## 1. Eligibility and Requirements

Consideration for successful eligibility of ITEP, the following criteria must be met:

### End User Requirements

1. Must be the road owner, and directly responsible for maintenance and costs associated to the road.
2. Must be able to provide in detail all variables for historical and existing road maintenance costs as required for program documentation.

## 2. Responsibilities and Obligations

The following describes each party's responsibilities and obligations for duration of this program.

### a. End User

- i. Supply of suitable grader/power unit for program duration.
- ii. Road segments of each type as required for evaluation.
- iii. Scheduling of all equipment, materials and labour as required for each road segment for duration of the program.
- iv. Supply of fuel & oil for the Road Badger during program.
- v. Insurance & Storage
- vi. Pick up of the Road Badger.
- vii. Availability of records relating to:
  1. Current road maintenance information and associated costs.
  2. Historical information if required.
  3. General Information as required for completion the program.
- viii. Ability to document identified road segment costs, time and expectations for existing method of rehabilitation, then record and compare final completion costs and production from utilization of the machine.
- ix. Provide Road Badger with letter from the municipality, identifying the performance and benefits obtained in each segment from using the machine.

### b. Road Badger

- i. Supply of Road Badger Unit
- ii. Operator for the Road Badger/Power Unit.
- iii. Supply detailed documentation
- iv. Input, recommendation and approval of each road segment to be rehabilitated.
- v. Work with municipal staff to identify and implement "best practices" for each segment to be completed.
- vi. All parts, materials & repairs or maintenance of the Road Badger.
- vii. Training and Instruction on use

### 3. Application Criteria

Testing and Evaluation of the Road Badger will be for use in the following applications.

#### i. Gravel Roads

Two methods will be performed to identify the production and benefits resulting from this application. Average daily production can see from 8 to 15km (or greater) completed.

a) Rehabilitation without new materials, based on roads 1/3<sup>rd</sup> to 1/2 through their regravelling schedule.

b) Rehabilitation with incorporation of new material, but reducing the proposed gravel application rate depending on rehabilitation results.

1. Gravel surfaced with course material not exceeding 3" diameter.
2. Road construction having an existing traveling surface consisting of an average minimum depth no less than 2x the aggregate designation size.
3. Ability to provide proposed re-gravelling, spot gravelling and general maintenance costs and information.

#### ii. Cold Mixed Roads

This application will include an evaluation resulting in an average daily production of 1 to 3 km per day.

1. Total surfacing to base depth is one lift, not to exceed 3" (76 mm).
2. Product specification and recommended application procedures to be available.
3. No hot mixed product has been applied.
4. Provide history of road, including design, original surfacing details, spot repairs and any rehabilitation in past.
5. Record comparison data relating to time, performance and costs of existing rehabilitation processes.

#### iii. Dust Abatement

This program will include an evaluation of both farmstead oiling and complete road rehabilitation if available.

1. Road has been surfaced with stabilization or abatement product requiring re-application or rehabilitation.
2. Product specification and manufacture information on recommended application procedures to be available.
3. Record comparison data relating to time, performance and costs of existing rehabilitation processes.

#### 4. Program Outline

The program is created to span from a minimum of two weeks, up to a total of four. The road segments and current maintenance procedures/costs will be identified and discussed prior to starting the program. For general planning information, the tentative operational schedule is as follows:

##### Week 1

- Pickup/Delivery of Machine (if not already completed)
- Planning & Scheduling of Equipment/Materials
- Best Practices and Application Training
- Power unit connections
- Road Rehabilitation

##### Week 2

- Road Rehabilitation
- Municipal Operator Training

##### Week 3

- Road Rehabilitation
- Unit Maintenance & Clean-up
- Shipping Preparations
- Production & Performance review

#### 5. Documentation & Reporting

Data is required for this program to be able to document current method cost, time and performance, and compare this data to results from Road badger utilization. The typical information that will allow for this cost comparison will include:

- i. Raw Material cost & information
- ii. Transportation costs
- iii. Application Rates
- iv. Equipment Fuel Usages
- v. Equipment Usage, Time & Costs
- vi. Labour Costs
- vii. Maintenance Frequency
- viii. Equipment and Fleet Information
- ix. Re-Gravelling Frequency
- x. Total Re-gravelling program details

##### a. Hourly Cost Information

Hourly ownership & operation rates may be required or requested by the municipality for completing the cost comparison and savings data. Road Badger hourly ownership and operation rates have been calculated according

to ARHCA formulas. Based on a standard 5yrs/4000hour usage, the hourly rate is \$140.80/hr. This includes the grader/power unit operator cost, which may normally be billed to the actual grader or power unit. If the later is true, an operator rate of \$32.05 should be subtracted from the total hourly rate. Please reduce this rate by the same percentage as you currently use for calculating your existing equipment fleet hourly costs, if so performed.

b. Rebate report details

To qualify for the rebate, a report letter must be provided to Road Badger with 7 days of completing the program. The details of the letter should include a breakdown of performance and savings identified for each road type completed. In some applications the savings may be limited to operational and equipment time, where in other applications it will include road materials as well. Road Badger will supply the municipality with the equipment and tooling costs for each application completed. This letter is intended to reflect the details and level of benefit that was identified from utilizing the Road Badger into your current maintenance procedures. A basic guideline is available for review at the municipalities' request.

6. Operational Procedures

a. Equipment

- i. A grader with ripper attachment is required for pulling the Roadbadger.
- ii. Any modifications (if required) to the power unit to allow proper connection to the Road Badger will be the responsibility of the end user.
- iii. Operational and ownership costs of the power unit to be identified.
- iv. The municipality is responsible to ensure the required equipment and material is scheduled to be able to complete the road segments in the given time frame.

b. Operators

- i. Road Badger personnel by default will operate the power unit and Road Badger, although it may be requested the municipality provides an operator if needed.
- ii. Road Badger will train end user personnel for operation, but use of end user personnel will be at Road Badgers' discretion for operation during testing.

c. Transportation

- i. Unit is FOB Road Badger specified location.
- ii. Pick up of the Road Badger unit will be the responsibility of the end user.
- iii. End user is liable for any and all damages that occur during transportation.

7. Financial

The total program cost is broken down into 3 sections, to allow for total expected program costs. The entire program is designed to combine the amount of road types to emphasize the versatility, production and material savings from Road

Badger utilization, providing value to the municipality. Under average performance, the end user should realize combined financial savings of time, material and equipment well exceeding the total cost of the program.

i. Program Cost

The cost of the program for Alberta Municipalities is \$8000.00. This fee is inclusive covering equipment and labour costs at reduced rates, including all transportation, accommodation for Road Badger personnel. A surcharge may be required for remote locations, or areas of exceptional accommodation and living costs. This surcharge will be agreed to by both parties prior to program start.

ii. Ground Engagement Tooling

Tooling consumed for the program will be billed in addition to the program base cost. Although road composition, thickness, and temperature conditions may vary, the expected tooling consumption for the average lane KM of length is expected to be between 120.00 and 250.00 dollars.

iii. Transportation Costs

As this program is designed to minimize costs to the municipality, the end users responsibility for transportation of the unit is only required one way. Road Badger will advise the municipality of the pick up location, as scheduling of this program is designed to reduce the transportation distances. Should the municipality require Road Badger to arrange pickup of the unit, the costs incurred are based as follows:

Contract Hauler: Cliff's Towing  
Start Point: Edmonton  
End Point: Edmonton  
Hourly Rate: \$ 102.00 (Return)

8. Invoicing & Payment

- a. Billing will be performed 8 days after program completion.
- b. All payments are due within 30 days from receipt of invoice.

9. Rebate & Incentives

- a. A \$ 2000.00 dollar credit will be applied for providing Road Badger with a letter or report from the municipality documenting the cost, benefit and production results from utilizing the machine. Basic templates are available on request.
- b. The above letter must be received within 7 days following completion of the program (prior to invoicing) to be eligible for the discount.
- c. An additional rebate will be offered to municipalities that choose to purchase a machine. The balance of the program base cost (up to \$20,000.00 dollars) will be credited off the purchase price of (1) machine, should the municipality make purchase arrangements within 90 days from program completion.



- d. This rebate will be offered by means of a discount off the purchase price,.
- e. This rebate is not cumulative, should the end user wish to perform this program again at a later date.
- f. This rebate will be available to end user's who have fulfilled the obligations of Section 5 and 8.

10. Terms and Conditions.

a. Modifications

Road Badger reserves the rights to modify, change, exclude or add to any part of this program at any time during the evaluation, with exception to stated program cost, rebates, and incentives.

b. Acceptance

Road badger has final acceptance and/or refusal of all road segments to be offered within this evaluation.

c. Liability

Road Badger will not be held liable for any damages to any property or persons through operation of its equipment.

d. Availability

This program is booked in advance prior to December 31st 2007, in order to schedule effective placement of the ITEP unit for the season. Reservations and commitments will be based on a first come first served basis. Final scheduling will be planned around the amount of booking received.

e. Rain Out/Weather

As weather is always an issue with road maintenance, rainouts (or expected) during the program will be dealt with on an individual basis. Longer delays lasting over 3 days in a given program week, a reduced rate of up to 50% will be applied in lieu of the regular weekly program rate.