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***Highways 2, 5 & 6 Corridor Study: Site
Developments And Interpretive Plan -
Technical Appendix
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**HIGHWAYS 2, 5 & 6
CORRIDOR STUDY: SITE DEVELOPMENTS AND
INTERPRETIVE PLAN**

TECHNICAL APPENDIX

Prepared for:

Government of the Northwest Territories
Economic Development and Tourism
Tourism and Parks
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Attention: Robin Reilly - Director of Parks
Alex Borowiecka - Project Contact/Manager

Dear Robin and Alex:

Re: **HIGHWAYS 2, 5 AND 6 CORRIDOR STUDY:
SITE DEVELOPMENTS AND INTERPRETIVE PLAN**

The study that follows, together with the Technical **Appendix**, represent the final report for the Highways 2, 5 and 6 Corridor Study.

We hope this will be a valuable document to the Department and serve as an overall planning and design outline for the region in the next few years. Thank you for the opportunity to be involved in the **study** and your assistance and direction throughout.

Yours truly,

UMA Engineering Ltd.

Anne D. **Charlton, M.L.A.**
Landscape Architecture,
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Attach.

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APPENDIX A
OPERATIONS AND MAINTENANCE GUIDELINES

1.0 OPERATIONS AND MAINTENANCE GUIDELINES

Excellence in operations and maintenance of park developments is critical in their continued enjoyment and use by park patrons', related economic returns and longevity of the capital investment.

This Appendix A outlines 3 arbitrary levels of operation and **maintenance** standards that have been developed for the proposed highway sites. Each level has tasks broken into seasonal, weekly and daily tasks. The frequency of task repetition (whether something is daily or weekly) should be based on performance standards. Performance standards state the desired product or state and in that sense take precedence over the suggested repetition. In other words, you may initially collect garbage twice a week; but if the performance standard indicates that the cans should not be greater than 3/4 full upon collection and they are usually **full** or overflowing, then the frequency needs to be changed to insure the performance standard and garbage collection may be three or even four times a week. Examples of performance standards are given for daily **maintenance** tasks.

A preventive maintenance program is also recommended. Preventative maintenance is the continuous attention and care of areas, facilities, and **equipment** to prevent damaging wear, costly repairs and safety hazards. This kind of a program also advocates that repairs are made immediately upon discovery of even a **small** problem so that they don't result in a larger problem the following spring. This focus results in a quality facility and experience and has been proven to lower vandalism rates, incur lower replacement cost expenditures and maintain a high level of public safety onsite.

The following three levels of maintenance standards have been arbitrarily developed to generally fit the levels of development proposed along the three highways. Each site and contract should include changes and additional site **specifics** that are not included here. These levels are only to **serve** as a starting point for the development of individual packages of operational plans.

It is our recommendation that a series of standard contracts be written up for the various types of development with standard performance standards.

We would also recommend a 3 day regional spring workshop every year with compulsory attendance **from** all **contractees** on operation and **maintenance** of park facilities. This serves to create a networking system of operators and also allows the contractor (**GNWT**) to walk the individuals through the process and expectations of performance standards, scheduling and inspections so that there is a common base of understanding and acceptance level of site maintenance across the region. A post high-season evaluation and debriefing session is also very valuable in adjusting standards and solving problems for the next year.

Alberta Recreation and Parks offers a series of mini-workshops for **lay-**people in park operation and maintenance roles. Borrowed expertise for a pilot workshop may be a method of bringing both existing and developing sites on track in the use of simple but systematic maintenance planning and operation.

The following productivity standards are a recommended starting point for scheduling of work and time on a weekly and monthly basis for a Level A **maintenance** schedule. Individual Operational Plans should be done for Level A sites.

Function/Activities	Annual Hours/Unit
1. Turf (Low Maintenance - Native Grass Mix)	0.25 hr./100 m ²
2. Turf (Medium Maintenance - Kentucky Bluegrass/Red Fescue Mix)	2 hr./100 m ²
3. Planting Beds (Digging, Edging, Levelling , Weeding)	7 hr./100 m ²
4. Planting and Maintenance of Annuals	5 hr./100 m ²
5. Pruning 0.5 hr./tree; shrub	
6. Planting Trees (Tree Spade)	1 hr./tree
7. Planting Shrubs (Tree Spade)	0.5 hr./shrub
8. Fertilizing Trees	0.25 hr./tree
9. Watering Trees (Water Truck)	0.25 hr./tree
10. Campsites	0.10 hr./100 m ²
11. Playgrounds	20 hr./100 m ²
12. Waterfronts	1 hr./100 m ²
13. Roads and Parking Lots (Gravel)	1.5 hr./100 m ²
14. Nature/Hiking Trails	1 hr./100 m ²
15. Maintenance Yard	2 hr./100 m ²

Function/Activities	Annual Hours/Unit
16. Fences and Gates	3.5 hr./100 m ²
17. Washroom Buildings (Seasonal: May-Sept.)	200 hr./100 m ²
18. Signs	.25 hr./Sign
19. Daily Equipment Maintenance (0.75 hr./day/unit)	75 hr./Unit
20. Lighting To be Calculated for	each Individual Site
21. Firewood Distribution	"
22. Refuse Pickup	"
23. Furniture Maintenance	"
24. Water Quality Control	"
25. Brush Cutting	"
26. Site Inspections	"
27. Wildlife Management	"
28. Overhaul all Maintenance Equipment	"

Note: Productivity Standards are estimates based on the City of Edmonton, and the City of **Lloydminster** maintenance statistics.

2.0 LEVEL A

2.1 Criteria for Level A

- High level of operation and maintenance scheduling and service.
- To warrant level **A**, development is at least one of the following:
 - in an urban **area**,
 - has an established medium to high frequency of use,
 - provides a higher level of service that requires a higher level of maintenance,
 - has experienced operational or maintenance problems in the past that **justify** “keeping a close eye on it”.
 - is a “flag ship” development.

2.2 Outline of Level A

a) SeaSo*early Maintenance

1. Campsites
2. Washrooms
3. Signs
4. Plant Material
5. Turf
6. Roads/Parking Lots
7. Trails
 - a) Gravel
 - b) Brushed
8. Playgrounds
9. Waterfronts
 - a) Boat Launch
 - b) Docks
 - c) Lake/Beach
 - d) Signs, Floats and Safety Equipment
10. Garbage and Wood Service
11. Potable Water Service

b) Weekly/Monthly Maintenance

1. Washrooms
2. Signs
3. Plant Material
4. Turf
5. Roads/Parking Lots

6. Trails
7. Playgrounds
8. Waterfronts
 - a) Boat Launch
 - b) Docks
 - c) Beach
 - d) Signs, Floats and Safety
9. Garbage and Wood Service
10. Potable Water Service

c) **Daily Maintenance**

1. Campsites
2. washrooms
3. Waterfronts
4. Garbage and Wood Service

2.3 SEASONAL/YEARLY MAINTENANCE

1. campsites

Spring

- Cut back new plant growth.
- Remove dead or diseased trees.
- Clear vegetation around site marker.
- Remove all debris.
- Level and gravel parking pads.
- Repair site markers as required.
- Distribute and repair tables as required.
- Repair tent pads as required.
- Repair hook-ups as required.
- Paint **fire-rings** as required.

Fall

- Repair and repaint all tables as required.
- Clean and repaint all **firepits/stoves**.
- Thoroughly clean all sites.

Winter Season - Year-round use

- Plow sites after heavy snowfall.
Check for slippery ice surfaces that need to be sanded to ensure visitor safety.
- Supply sites with **firewood**.

Fall/Winter Season - Seasonal Use

- Remove tables from sites if not cemented in.
- Stack small amount of firewood at each campsite.
- Visually check area once every 10 days.

2. Washrooms (Seasonally Open)

Spring

- Inspect for damage and repair as required.
- Service check all utilities and repair as required.
- Thoroughly clean interior and exterior.
Refill washroom towel, soap and toilet paper dispensers.
- Replenish deodorant blocks.
Refill washroom waste receptacles with garbage bags.

Fall

- Thoroughly clean interior and exterior.
- Paint outside of facility as required.
- Paint inside of washrooms.
- Service check all utilities.
Pump out all water lines during the second week of September.
- Pump out holding tanks.
Pour 1 gallon of **R.V.** antifreeze into toilets and sinks.

3. Signs

Spring

Inspect sign panels for damage, vandalism and warping. Replace or repair panels as required.

Inspect painted and stained surfaces for cracking, blistering and exposed areas. Paint or stain as required.

Inspect sign posts for damage, solid placement and vertical alignment. Replace or repair posts and reset or stabilize loose posts as required.

Inspect signage hardware (fasteners), and re-tighten or replace corroded hardware as required

Thoroughly clean sign panels with a soft brush and mild, non-abrasive detergent. Rinse off with clear water.

Fall

- Repaint signs on a four (4) year **rotation**, or as required.

Winter

- Inspect for damage, vandalism and vertical alignment. Repair and/or stabilize loose posts as required.
- Inspect sign panels for legibility. Clean as required.

4. **Plant** Material

Spring

- Prune **all** formally planted trees, shrubs and ground covers to remove broken, dead or diseased branches; e.g. around an entrance sign.
Inspect for **dead**, diseased and hazardous trees and shrubs. Remove as required.
Plant new trees and shrubs where necessary.
- Remove all visible weeds and debris from planting beds.
- Sharply **define** planting bed edges.
Fertilize “formal” trees and shrubs plus all planted beds as needed.
Plant annuals in planting beds after last spring frost.
- Water planting beds thoroughly to a 15 cm (6 inch) depth.

Fall

- Remove all visible weeds and debris from the planting beds.
- Dig the beds up into large uniform lumps.
- Soil test all planting beds.

5. Turf - Formal Grassed Area

Spring Start-up

- Aerate turf by removing soil cores to a depth of 15-25 cm (6 to 10 inches) when turf is soft but not saturated.
- Break up soil cores using a flexible steel mat.
- Soil test (i.e. nutrient level **and pH**) on a three(3) year rotation.
- Fertilize with a commercial 5-1&5 fertilizer (1 ton/acre), or as required by periodic soil test.
- Lime as required by periodic soil test. If liming is required do not fertilize for two months after application. Do not apply more than 50 **lbs.** of lime per 1,000 **ft²**. If more is needed apply one (1) year later.
- Edge **all** curbs, walkways, trails and plantings.
 - Inspect for fungus disease (i.e. powdery mildew, snow mold, leaf spot, root rot, brownpatch, or dollar spot) and apply appropriate fungicide after first mowing.
- Inspect for dead spots and overseed or renovate as required.
 - Apply **2, 4-D Amine** (1 lb./acre) to control **broadleaf weeds**.

Fall Shut-Down

- Cut to a 3.75 cm (1.5 inch) height.
- Trim around edges, facilities and plantings.
- Sweep to remove grass clippings.

6. Gravel Roads/Parking Areas

Spring

- Blade to a smooth surface.
- **Re-gravel** as required.
 - Pick litter and trash from roads, parking lots and ditches.

Winter

- Clear snow as required.
- Inspect for ice accumulation. Sand as required

7. Trails

a) Gravel Trails

Spring

- Remove all hazardous material.
- Inspect for heave spots, sink holes, and erosion gullies. Repair as required.
Inspect for a minimum thickness of gravel at trails edge (e.g. 150 mm) and crown (e.g. 200 mm). **Re-gravel** as required.

b) Brushed Trails

Spring

- Remove all hazardous material.
- Inspect for heave spots, sink holes, and erosion gullies. Repair as required.
Brush trail surface out for new vegetation.
- Prune and cut back all vegetation within 300 mm (12") of the brushed trail surface to a 50 mm height.

8. **Playgrounds**

Spring

- Clear away all glass, cans, rocks, refuse and other debris.
- Replenish sand to a 25 cm depth. Rake and level.
- Remove, replace or repair broken or worn equipment and equipment parts.
- Sand and repaint metal equipment as required.
- Repaint or **restain** wood equipment as required.
- **Re-install** equipment which has been stored over the winter (e.g. swing seats).

- Inspect all nuts, bolts and nails. Tighten or replace as required.
- Lubricate all moving parts.

Fall

Restain and/or repaint play equipment on a 4 year rotation or as required.

Dismantle and store equipment as required.

- Lubricate all moving parts.
- Winterize drinking fountains.
- Remove all protruding fixtures to prevent accidents or vandalism.

Inspect all nuts, bolts and nails. Tighten or replace as required.

- Sand and/or rasp all rough areas on play equipment. **Restain** or repaint as required.
- Thoroughly inspect all equipment. Remove, replace or **repair** as required.

Clear away all glass, cans, rocks, refuse and other debris.

9. Waterfronts

The following are general standards for a Waterfront that contains a beach, swimming area, dock and boat launch.

a) Boat Launch/Boat Beaching Area

Spring (Start Up)

Inspect boat launch ramp and approaches for the proper grade and check for soft spots, ruts, potholes, etc. Grade and/or repair as required.

Inspect cement pads for proper alignment, even **gravel** surface under and between pads, crumbling, sharp edges, and fractures. **Realign**, level and/or replace as required.

Remove debris and hazardous rocks from the boat beaching area.

Inspect the shoreline of the boat beaching area for erosion.

Re-level as required.

b) Dock and Portable Pier

Spring (Start Up)

- Install portable pier(s).
- Inspect for **rotted**, burned, splintered or badly cracked timbers, planks, stringers, steps, decking or railings. Repair as required.

Ensure all decking, steps and railings are securely attached, and all decking planks are even. Secure and level as required.

- Inspect all fastenings hardware for tightness, damage, and corrosion. Tighten and replace as required.

Inspect anchor rings and tie-up points for sharp edges, breaks, or corrosion beyond surface rusting, and ensure they are firmly attached to the structure. Secure and **repair as** required.

Inspect **all** concrete structures (e.g. structural supports, retaining walls, breakwaters, walkways, etc.) for broken, crumbling, badly **cracked**, or chipped surfaces. Repair **as** required.

Fall (Shut Down)

Remove portable pier prior to freeze-up.

Inspect the portable pier's wheels and undercarriage for damage and corrosion beyond surface rusting. **Repair as** required.

- Check the portable pier's deck for secureness. Repair **as** required.
- Store portable piers in an appropriate and proper manner.

c) Lake/Beach

Spring (Start-Up)

- Inspect for hazardous soft spots, sudden slopes, holes, sharp submerged or hazardous rocks, and hazardous debris within the water of the waterfront area. Remove or mark all underwater hazards as required.
- Pick all litter and trash from the waterfront area.
- Remove all hazardous rocks or debris from the beach area.
- Disc and level beach area.
- Add sand to beach area to maintain a minimum sand depth of 250 mm (10 inches).
Remove aquatic plants from the waterfront area through mechanical or biological control.
Remove all drift weed accumulations from the waterfront area.

Winter

- Conduct frequent tests for ice thickness along the shoreline during freeze-up using an ice auger.
- Once the “Effective Ice Thickness” i.e. -
Thickness of Clear Blue Ice + 1/2 Thickness of White Ice
= 18 inches along the lake edge remove and store the thin ice signs.

d) **Signage/Safety** Equipment/Float Lines and Buoys (Unsupervised Waterfront Areas)

Spring (start-up)

- During break-up install thin ice signs. After break-up remove thin ice signs and install general regulation and/or individual regulation signs e.g. swimming not supervised.
Note: Provisions should be made so that notices relating to water quality (i.e. unsatisfactory bacterial counts or infestations such as swimmers itch) can be posted
- Locate beach front safety equipment; i.e.

reaching, towing and throwing assists at designated rescue stations

- paddle board or boat equipped with reaching and throwing assists
- **first** aid kit, emergency blankets, spinal board and stretcher
- a public address system (megaphone)
- a reaching pole at piers and docks.
- Set out buoy lines to mark designated swimming areas.
Install Federal Boating Restriction Signs to designate a no boating zone between the marked swimming area and the boating area.
Install Federal Boating Restriction Signs (e.g. No Boats; No Power Boats; No Gas Powered Boats; Maximum Speed 12 **km/hr.**) if applicable.

Fall Shutdown

- During freeze-up remove general regulation signs and install thin ice signs.
- Overhaul all beach front safety equipment by cleaning, lubricating, adjusting, protecting, repairing and/or replacing. Store all safety equipment in an appropriate and proper manner.
Repair and replace any damaged components of the float lines, buoys and related boating restriction signs and store in an appropriate and proper manner.

10. Garbage and Wood Service

Spring

- Repair and repaint all garbage cans and enclosures as required.
- Replace missing lids.
- Thoroughly clean all garbage containers and enclosures.
Repair and repaint all wood enclosures as required.

Insure vehicle access to wood piles is restricted except for service vehicles.

Restock all wood enclosures from central off-site storage.

Fall

- Thoroughly clean all garbage cans and enclosures.
- Repair or replace any damaged lids or cans.
- Restock wood enclosures 1/4 full for winter use.

11. Potable Water Service

Spring

Inspect water tank for leaks, corrosion, damaged fasteners etc.

Repair as needed

- Cleanse of mineral deposits.
- Flush tank well.
Fill and add chlorinating agent as required.
- Sample water when filled.
- Check pump and/or tap system.
- Lubricate all moving mechanical parts.

Fall

- Drain tank.
- Inspect for leaks, **corrosion**, rusting etc. Repair **as** needed.
- Winterize tank and all moving parts.

2A WEEKLY/MONTHLY MAINTENANCE

1. washrooms

- Wash all walls.
- Pump out vault toilet holding tanks and apply **odour** control agent as required.

Performance Standards

- Vault toilet should never exceed 3/4 full.
- Washroom should not be malodorous at any time.

2. signs

Summer

Inspect signs for damage, vandalism and vertical alignment. Repair and/or stabilize loose posts as required.

- Inspect sign panels for cleanliness. Clean as required.

Performance Standard

All signs should be erect, **legible** and in good repair at all times.

Damaged signs should be replaced within 14 days.

Repairs should be done within 5 days.

3. Plant Material

Summer

- Inspect for insect and diseases. Treat as required.
- Inspect for broken or dead branches. Prune as required.
- Water parkland trees and shrubs plus all planting beds during **dry** conditions to ensure 15 cm (6 inches) of water per week. Water at night only.
- Weed and hoe planting beds as required.

Performance Standard

- There are no trees or shrubs in immediate sight or use area that are desiccated have **off-colour** leaves, or otherwise look sickly.

4. Turf

Summer

- Cut to a 5 cm (2 inch) height.
- Trim around edges, facilities and plantings.
- Inspect for weeds. Treat as required.

Performance Standards

- Turf should never appear long or untidy.
- There are no noticeable weed patches.

Turf Monthly Maintenance

- Sweep turf areas once per month or as required to remove grass clippings.
As needed, topdress in July to a 31 mm (1/8 inch) depth with 42 cubic **yards/hectare** (17 cubic yards/acre) of loose pliable sand.

5. Gravel Roads/Parking Areas

Summer/Fall

- Inspect for sink holes and erosion gullies. Repair as required.
- Inspect for dry and dusty roads. Calcium Chloride as required.
- Inspect for smooth surface. Blade as required.

Performance Standard

- Puddling should not occur after rainfalls.
- Few complaints should be received on “state” of gravel roads.

6. Gravel or Brushed Trails

Summer/Fall

a) Weekly Maintenance

- Remove all hazardous material.
- Inspect for heave spots, sink holes, erosion gullies. Repair as required.

b) Monthly Maintenance

Cut back all vegetation within 300 mm (12 inches) of trail's edge to a 50 mm (2 inch) height.

Ensure all vegetation is cleared to a height of 3 m (9.8 feet) within the hiking trail clearing.

- Physically remove all plant growth on the trail itself.

Performance Standards

Vegetation should not encroach on the trail such that it **appears** it unused or **unmaintained**.

- Trail should be obvious.
- Walking surface should not require constant observation by walker because of uneven or poor surface.

7. Playgrounds

Clear away all glass, cans, rocks, refuse and other debris.

Turn over all sand that has become hard packed (e.g. under swings, slides, climbers, etc.) with a pitchfork. Replenish sand to a 25 cm depth as required. Rake and level.

- Thoroughly inspect all equipment. Remove, replace or **repair as** required.
- Inspect all nuts, bolts and nails. Tighten or replace as **required**.
Check for squeaky operation. Lubricate moving parts as required.
Inspect metal slides for sharp edges and protrusions. File or sand, then repaint as required.
- Wash slide deck as required.

- Inspect for sharp edges and splinters on boards. Rasp or sand as required.

Performance Standard

Visual or manual inspection should not reveal any undo safety hazards for children.

- All equipment in play area should be operational.

8. Waterfronts

The following are general standards for a waterfront that contains a **beach**, swimming area, dock and boat launch. Performance standards for waterfronts should be written to the individual site.

Summer - Operating Season

a) Boat Launch and Boat Beaching Area

Inspect boat launch for damage and general operational condition as outlined for spring maintenance. Repair as required

- Remove debris and hazardous rocks from the boat beaching areas.

Inspect the shoreline of the boat beaching area for erosion. **Re-level** as required

b) Dock and Portable Pier

Inspect portable pier and dock for vandalism, damage and general operational condition as outlined for spring maintenance. Repair as required

Adjust portable pier to an appropriate height in relation to lake levels.

c) Lake/Beach

Weekly Maintenance

- Pick **all** litter and trash from the waterfront area.
Remove all hazardous rocks or debris from the beach area.
- Disc and level beach area.
- Remove all drift weed accumulations from the waterfront area.

Monthly Maintenance

Inspect for hazardous soft spots, sudden slopes, holes, sharp submerged or hazardous rocks, and hazardous debris within the water of the waterfront area. Remove or mark all underwater hazards as required

d) **Signage/Safety** Equipment/Float Lines and Buoys (Unsupervised Waterfront Area)

- Inspect regulation signs for damage, vandalism and vertical alignment. Repair and/or stabilize loose parts as required.
- Inspect all sign panels for cleanliness. Clean as required.

9. Garbage and **Wood Service**

Wash out all garbage cans and enclosures, inside and outside.

- Restock wood enclosures.

Performance Standard

- Garbage cans or enclosures should not smell offensive.
- Wood enclosures should not be less than 1/4 full at time of restocking.

10. Potable Water Service

Weekly

- Refill water tank.
- Add chlorinating agent as required.
- Check for acceptable taste.
- Sample water for acceptable bacterial count.

Monthly

- Flush tank.
- Refill.

Performance Standard

- Water tank should not be less than 1/4 full at time of refilling.
- Water samples should not indicate undue bacterial content.
- Water taste should be acceptable to park users at all times.

2.5 DAILY MAINTENANCE

1. campsites (seasonally open)

Inspection and servicing of vacant sites as required to include:

- Removal of litter from campsites.
- Clean out fire pits as required.
- Inspect tables, site markers, firepits, hook-ups, and pads for damage and repair as required.
- Minor cleaning and **levelling** of tables.
- Pile any remaining **firewood** near firepit.

Performance Standard

New campers should never be given a littered campsite.

All campers should receive directions to a wood pile.

Tables and site furnishings should not appear vandalized in any way.

Table should be clean and level for all new campers.

2. Waterfronts

- Visually inspect beach area for hazardous rocks or debris and remove them.

Visually inspect from shore marker buoys, float lines and boating restriction signs for **vandalism**, damage or drifting. Reset or repair as required.

- Inspect all beach front safety equipment for **vandalism**, damage and operational effectiveness. Repair or replace as required.

Performance Standards

- Beach should be clean at all times.
- Reported cuts due to hazardous material on beach should be minimal.

Waterfront signage and buoy lines should be clean and operative at all times. Few reported incidents should site wrong action as a result of signs or markers (awareness or knowledge).

3. Garbage and wood service

Collect garbage late morning or early afternoon.

Check enclosures for malodorous cans and wash out as needed with germicidal cleanser.

Visually check wood enclosure for sufficient wood.

Performance Standards

- Garbage enclosures should not smell offensive.
Garbage cans should not regularly be more than 3/4 full at collection time.
- Wood enclosures should not be less than 1/4 full any time.

3.0 LEVEL B

3.1 Criteria for Level B

This is a campsite, picnic site or roadside pull-off characterized by at least one of the following statements:

- Near an urban area.
- Receiving local as well as tourist use.
- Site is general 40-70% occupied in high season.
- Moderate amount of shoulder season use.
- Facilities such as potable water and wood are available seasonally.
- Site strongly reflects surrounding natural character.
- Walking, boating, viewing or interpretive activities are present.

3.2 Outline of Level B

A) SEASONAL AND YEARLY MAINTENANCE

1. Campsites/Picnic Sites
2. Toilet Facilities
3. Signs
4. Plant Material
5. Turf
6. Roads/Parking Lots
7. Trails
 - a) Gravel
 - b) Brushed
8. Playgrounds
9. Waterfronts
 - a) Boat Launch
 - b) Docks
 - c) Beach
 - d) Signs and Safety Equipment
10. Garbage and Wood Service
11. Potable Water Service

B) MONTHLY AND BI-MONTHLY MAINTENANCE

1. Toilet Facilities
2. Signs
3. Plant Material
4. Turf
5. Roads
6. Trails
7. Playgrounds
8. Waterfronts
 - a) Boat Launch
 - b) Dock
 - C) Beach
 - d) Signs and Safety Equipment
9. Garbage and Wood **Service**
10. Potable Water Service

c) TWICE WEEKLY MAINTENANCE

1. Campsites/Picnic Sites
2. Toilet Facilities
3. Waterfronts
4. Garbage and Wood Service

3 . 3 SEASONAL/YEARLY MAINTENANCE

1. Campsites/Picnic Sites

Spring

- Cut back new plant growth.
- Remove dead or diseased trees.
- Remove all debris.
- Level parking pads.
- Distribute and repair tables as required.
- Paint fire-rings as required.

Fall

- Repair and repaint all tables as required
- Clean and repaint **all** firepits/stoves.
- Thoroughly clean **all** sites.

Winter Season - Year-round use

- Plow roads and 25% of sites after heavy snowfall.
- Check for slippery ice surfaces that need to be sanded to ensure visitor safety.
- Supply plowed sites with firewood.

Fall/Winter Season - Seasonal Use

- Remove tables from sites if not cemented in.
- Stack small amount of firewood at each campsite.
- Visually check area monthly.

2. Toilet Facilities (Seasonally Open)

Spring

- Inspect for damage and repair as required
- Service check vault and repair as required
Thoroughly clean interior and exterior.
- Refill toilet paper **dispensers**.
- Replenish deodorant blocks.

Fall

- Thoroughly clean interior and exterior.
- Paint outside of facility as required.
Paint inside.
Service check vault.
Pump out holding tanks.

3. signs

Spring

- Inspection signs panels **for damage**, vandalism and warping. Replace or repair panels as required.
Inspect painted and stained surfaces for cracking, blistering and exposed areas. Paint or stain as required
- Inspect signs posts for damage, solid placement and vertical alignment. Replace or repair posts and reset or stabilize loose posts as required.
- Inspect signage hardware (fasteners), and **re-tighten** or replace corroded hardware as required.
Thoroughly clean sign panels with a soft brush and **mild**, non-abrasive detergent. Rinse off with clear water.

Fall

- Repaint signs on a four (4) year rotation, or as required.

Winter

- Inspect monthly for damage, vandalism and vertical alignment.
Repair and/or stabilize loose posts as required.

4. Plant Material

Spring

- Prune all formally planted trees, shrubs and ground covers to remove broken, dead or diseased branches; e.g. around an entrance sign or trail map.
- Inspect for **dead**, diseased and hazardous trees and shrubs. Remove as required.
- **Revegetate** with native materials where necessary.
- Water **revegetated** material weekly for 6 weeks or as needed.

5. Turf

Spring Start-Up

- Turf in Level B sites will usually be native wild grass mixes that are mowed monthly.
Soil test (i.e. nutrient level and **pH**) on a three (3) year rotation. Fertilize as required by periodic soil test to insure good annual regeneration. Reseed as required.
- Edge all trails, walkways or formal areas.
Inspect for spreading fungus disease and apply appropriate fungicide after spring mowing.
- Inspect for dead spots and **overseed** or renovate as required.

Fall Shut Down

- Cut to a 75 mm (3 inch) height.

6. **Gravel Roads/Parking Lots**

S-row

- Blade to a smooth surface.
- **Re-gravel** as required
- Pick litter and trash from roads, parking lots and ditches.

Winter

- Clear snow as required.

7. Trails

a) Gravel Trails

Spring

- Removal **all** hazardous material.
- Inspect for heave spots, sink holes, and erosion gullies. Repair as required
- Inspect for a minimum thickness of gravel at trails edge (e.g. 150 mm) and crown (e.g. 200 mm). **Re-gravel** as required

b) Brushed Trails

Spring

- Remove all hazardous material.
- Inspect for heave spots, sink holes, and erosion gullies. Repair as required.
- Brush **trail** surface out for new vegetation.
Prune and cut back all vegetation within 300 mm (12”) of the brushed trail surface to a 75 mm height.

8. Playgrounds

Spring

- Clear away all glass, cans, rocks, refuse and other debris.
- Replenish sand as needed. Rake and level.
- Remove, replace or repair broken or worn equipment and equipment parts.
- Sand and repaint metal equipment as required.
- Repaint or **restain** wood equipment as required.

- Reinstall equipment which has been stored over the winter (e.g. swing seats).
- Inspect all nuts, bolts and nails. Tighten or replace as required.
- Lubricate all moving parts.

Fall

- **Restain** and/or repaint play equipment on a 4 year rotation or as required
- Dismantle and store equipment as required
- Lubricate all moving parts.
- Remove all protruding fixtures to prevent accidents or vandalism.
- Inspect **all** nuts, bolts and nails. Tighten or replace as required.
- Sand and/or rasp all rough areas on play equipment. **Restain** or repaint as required.
- Thoroughly inspect all equipment. Remove, replace or **repair as** required.
- Clear away all glass, cans, rocks, refuse and other debris.

9. **Waterfronts**

The following are general standards for a **waterfront** that contains a **beach**, swimming **area**, dock and boat launch.

a) Boat Launch/Boat Beaching Area

Spring (Start Up)

Inspect boat launch ramp and approaches for the proper grade and check for soft spots, ruts, potholes, etc. Grade and/or repair as required.

Inspect cement pads for proper alignment, even gravel surface under and between pads, crumbling, sharp edges, and fractures.

Realign, level and/or replace **as required**.

Remove debris and hazardous rocks from the boat launching area.

- Inspect the shoreline of the boat launching area for erosion. **Re-level** as required.

b) Dock and Portable Pier

Spring (Start Up)

- Install portable pier(s).
Inspect for **rotted**, burned, splintered or badly cracked timbers, planks, **stringers**, steps, decking or railings. Repair as required.
- Ensure all decking planks are even. Secure and level as required.
Inspect all fastenings hardware for tightness, damage, and corrosion. Tighten and replace as required.
- Inspect anchor rings and tie-up points for sharp edges, breaks, or corrosion beyond surface rusting, and ensure they are firmly attached to the structure. Secure and repair as required.
- Inspect **all** concrete structures (e.g. structural supports, retaining walls, breakwaters, walkways, etc.) for broken, crumbling, badly cracked, or chipped surfaces. Repair as **required**.

Fall (Shut Down)

- Remove portable pier prior to freeze-up.
- Inspect the portable pier's wheels and undercarriage for damage and corrosion beyond surface rusting. Repair as required.
- Check the portable pier's deck for secureness. Repair as required.
- Store portable piers in an appropriate and proper manner.

c) Lake/Beach

Spring (Start-Up)

- Inspect for hazardous soft spots, sudden slopes, holes, sharp submerged or hazardous rocks, and hazardous debris within the water of the waterfront area. Remove or mark all underwater hazards as required.
- Pick up litter and trash from the waterfront area.
- Remove all hazardous rocks or debris from the beach area.
- Disc and level beach area.
Add sand to beach area to maintain a minimum sand depth of 250 mm (10 inches).
- Remove all drift weed accumulations from the waterfront area.

Winter

- Conduct frequent tests for ice thickness along the shoreline during freeze-up using an ice auger.
- Once the “Effective Ice Thickness” i.e. -
Thickness of Clear Blue Ice + 1/2 Thickness of White Ice
= 18 inches along the lake edge remove and store the thin ice signs.

d) **Signage/Safety** Equipment (Unsupervised Waterfront **Areas**)

Spring (Start-Up)

- Locate beach front safety equipment; i.e.
 - reaching, towing and throwing assists at designated rescue stations
 - check that the first aid kit is current.
 - locate a reaching pole at piers and docks.
- Install Federal Boating Restriction Signs (e.g. No Boats; No Power Boats; No Gas Powered Boats; Maximum Speed 12 **km/hr.**) if applicable.

Fall Shutdown

- During freeze-up remove general regulation signs.
- Overhaul all beach front safety equipment by cleaning, lubricating, adjusting, protecting, repairing and/or replacing. Store all safety equipment in an appropriate and proper manner.
- Repair and replace any damaged components of the buoys or boating restriction signs and store **in** an appropriate and proper manner.

10. Garbage and Wood Service

Spring

- Repair and repaint **all** garbage cans and enclosures as required.
- Replace missing lids.
- Thoroughly clean all garbage containers and enclosures.
- Repair and repaint all wood enclosures as required.
- Insure vehicle **access** to wood piles is restricted to service vehicles.
- Restock all wood enclosures from central off-site storage.

Fall

- Thoroughly clean all garbage cans and enclosures.
- Repair or replace any damaged lids or cans.
- Restock wood enclosures 1/4 **full** for winter use.

11. Potable Water service

Spring

- Inspect water tank for leaks, corrosion, damaged fasteners etc. Repair as needed.
- Cleanse of mineral deposits.
- Flush tank well.
- Fill and add chlorinating agent as required.
- Sample water when filled.
- Check pump and/or tap system.
- Lubricate all moving mechanical parts.

Fall

- Drain tank.
- Inspect for leaks, **corrosion**, rusting etc. Repair as needed.
- Winterize tank and all moving parts.

3.4 BI-MONTHLY MAINTENANCE

1. Toilet Facilities

- Pump out vault toilet holding tanks and apply **odour** control agent as required

Monthly

- Wash all walls.

2. signs

- Inspect signs for damage, vandalism and vertical alignment. Repair and/or stabilize loose posts as required

Monthly

- Inspect sign panels for cleanliness. Clean as required.

3. Plant Maintenance - High season

Monthly

- Inspect for insect and diseases. Treat as required.
- Inspect for broken or dead vegetation. Replace as required.

4. Turf

Summer

Monthly

- Cut to a 7.5 cm (3 inch) height.
- Inspect for disease. Treat as required.

5. Gravel Roads/Parking Lots

Summer/Fall

Monthly

- Inspect for sink holes and erosion gullies. Repair as required.
- Inspect for dry and dusty roads. Calcium Chloride as required.
- Inspect for smooth surface. Blade as required.

6. Gravel or Brushed Trails

Summer/Fall

- Cut back all vegetation within 300 mm (12 inches) of trail's edge to a 75 mm (3 inch) height.

Monthly

- Remove all hazardous material.
- Inspect for heave **spots**, sink holes, erosion gullies. Repair as required.

7. Playgrounds

- Clear away **all** glass, cans, rocks, refuse and other debris.

Monthly

- Turn over **all** sand that has become hard packed (e.g. under swings, slides, climbers, etc.) with a pitchfork. Replenish sand as required. Rake and level.
- Thoroughly inspect all equipment. Remove, replace or **repair as** required.
Inspect all nuts, bolts and nails. Tighten or replace as required.
- Check for squeaky operation. Lubricate moving parts as required.
- Inspect metal slides for sharp edges and protrusions. File or sand, then repaint as required
- Inspect for sharp **edges** and splinters on boards. Rasp or sand **as** required.

8. Waterfronts

The following are general standards for a waterfront that contains a **beach**, swimming **area**, dock and boat launch.

Summer (Operating) Season

a) Boat Launch and Boat Beaching Area

Inspect boat launch for damage and general operational condition as outlined for spring maintenance. Repair as required.

- Inspect the shoreline of the boat beaching area for erosion and hazardous rocks. Rework as required

b) Dock and Portable Pier

Inspect portable pier and dock for **vandalism**, damage and general **operational** condition as outlined for spring maintenance. Repair as required.

- Adjust portable pier to an appropriate height in relation to lake levels.

c) Lake/Beach

Pick all litter and trash from the waterfront area.

- Remove all hazardous rocks or debris from the beach area.
Remove all drift weed accumulations from the waterfront area.
Monthly
- Inspect for hazardous soft spots, sudden slopes, holes, sharp submerged or hazardous rocks, and hazardous objects or debris within the water of the waterfront area. Remove or mark all underwater hazards as required.

d) **Signage/Safety** Equipment Unsupervised Waterfront Area

Inspect regulation signs for damage, vandalism and vertical alignment. Repair and/or stabilize loose parts as required.

9. **Garbage** and Wood Service

- Wash out all garbage cans and enclosures, inside and outside.
- Restock wood enclosures.

10. **Potable Water Service**

- Refill water **tank**.
- Add chlorinating agent as required.
- Check for acceptable taste.
- Sample water for acceptable bacterial count.

Monthly

- Flush Tank.
- Refill.

3.5 TWICE WEEKLY MAINTENANCE

1. Campsites/Picnic Sites (Seasonally Open)

Inspection and servicing of vacant sites as required to include:

- Removal of litter **from** campsites.
- Clean out fire pits as required.
- Inspect tables, site markers and firepits for damage and repair as required.
- Minor cleaning and **levelling** of tables.
- Pile any remaining firewood near **firepit**.

Performance Standard

- New campers should rarely have to park in a littered campsite.
- Tables and site furnishings should not appear vandalized in any way.
- Table should be clean and level for all new campers.

2. Waterfronts

- Visually inspect beach area for hazardous rocks or debris and remove them.

Performance Standards

- Beach should be clean at all times.
- Reported accidents due to hazardous material on beach should be minimal.
- Waterfront signage should be clean and operative at all times. Few reported incidents should site wrong action as a result of signs or markers (awareness or knowledge).

3. Garbage and Wood **Service**

- Collect garbage late morning or early afternoon.
- Check enclosures for malodorous cans and wash out as needed with germicidal cleanser.
- Visually check wood enclosure for sufficient wood.

Performance Standards

- Garbage enclosures should not smell offensive.
Garbage cans should not regularly be more than 3/4 full at collection time.
- Wood enclosures should not be less than 1/4 full any time.

4.0 LEVEL C

4.1 Criteria for Level C Sites

These are small picnic sites or roadside pull-offs with minimal facilities characterized by at least one of the following statements:

- Site is designed for short interval stops.
- Limited **services** and site amenities.
- Potable water is not available.

Onsite activities are limited to interpretive information, picnicking and short walks.

4.2 OUTLINE FOR LEVEL C

A) SEASONAL/YEARLY MAINTENANCE

1. Picnic Sites
2. Toilet Facilities
3. Signs
4. Plant Materials
5. Turf
6. Roads
7. Trails
8. Playgrounds
9. Waterfronts
10. Garbage

B) WEEKLY/MONTHLY MAINTENANCE

1. Picnic Sites
2. Toilet Facilities
3. Signs
4. Plant Material
5. Roads.
6. Trails
7. Waterfronts
8. Garbage

There is no daily or **bi-weekly maintenance** of a Level C site. More frequent maintenance of a Level C site should be on an **individual**, as-needed and identified basis.

4.3 SEASONAL YEARLY MAINTENANCE

1. Picnic Sites

Spring

- Cut back new plant growth.
- Remove dead or diseased trees.
- Remove all debris.
- Repair and repaint tables as required.

Fall

- Repair tables as required.
- Clean site.

Winter

- **Visually** check area monthly.

2 Toilet Facilities (Seasonally Open)

Spring

- Inspect for damage and repair as required.
- Service check vault and repair as required.
- Thoroughly clean interior and exterior.
- Refill toilet paper dispensers.
- Replenish deodorant blocks.

Fall

- Thoroughly clean interior and exterior.
- Paint outside of facility as required
- Paint inside.
- Service check vault.
- Pump out holding tanks.

3. signs

Spring

- Inspect sign panels for damage, vandalism and warping. Replace or repair panels as required.
Inspect painted and stained surfaces for cracking, blistering and exposed areas. Paint or stain as required.
- Inspect signs posts for damage, solid placement and vertical alignment. Replace or repair posts and reset or stabilize loose posts as required
- Inspect **signage** hardware (fasteners), and **re-tighten** or replace corroded hardware as required
- Thoroughly clean sign panels with a soft brush and **mild**, non-abrasive detergent. Rinse off with clear water.

Fall

Repaint signs on a four (4) year **rotation**, or as required.

Winter

- Inspect monthly for damage, vandalism and vertical alignment.
Repair and/or stabilize loose posts as required.

4. Plant Materials

Spring

- Inspect for **dead**, diseased or hazardous trees. Remove as required.
- **Revegetate** with native stock as required.
- Water **revegetated** material weekly for 4-6 weeks or as needed.

5. Turf

- There will be no turf in Level C sites except along the Highway ditches (maintenance there is done by Dept. of Public Works and Highways).

6. Gravel Roads/Parking Lots

Spring

- Blade to a smooth surface.
- **Re-gravel** as required.
 - Pick litter and trash from road, parking areas and ditches.

Winter

- Clear snow as required.

7. Gravel/Brushed Trails

Spring

- Removal all hazardous material.
- Inspect for heave spots, sink holes, and erosion gullies. Repair as required.
- **Re-gravel** as needed.
 - Cut back all vegetation within 300 mm (12") of the brushed trail surface.

8. Playgrounds

There are no playgrounds associated with sites in this operational level.

9. **Waterfronts**

There are no developed waterfronts associated with sites in this operational level.

Informal waterfronts should be checked for obvious hazards, debris and litter. These should be removed.

- Shorelines should be visually checked for erosion and repaired as needed.

10. Garbage Collection

Spring

- Repair and repaint all garbage cans and enclosures as required.
- Replace missing lids.
- Thoroughly clean all garbage containers and enclosures.

Fall

- Thoroughly clean all garbage cans and enclosures.
- Repair or replace any damaged lids or cans.

4.4 WEEKLY/MONTHLY MAINTENANCE

1. Picnic sites

Weekly

- **Visually** check sites for vandalism. Repair as required.
- Wipe down table tops.

Performance Standard

- Evidence of vandalism to tables should not be evident.
Table should not appear **unused**, dirty or dusty.

2. Toilet Facilities

Weekly

- Sweep out facility.
- Clean inside of outhouse with germicidal chemical.
- Refill toilet paper dispenser.

Monthly

- Replenish deodorant blocks as required
- Pump out vault holding tanks and apply **odour** control as required.
- Wash the floor.
- Remove marks on walls as required.

Performance Standard

- Toilet paper holder should not be empty at time of servicing.
- Facility should not be malodorous and have a clean, usable appearance at all times.

3. signs

weekly

- Inspect signs for damage, vandalism and vertical alignment. Repair and/or stabilize loose posts as required

Monthly

- Inspect sign panels for cleanliness. Clean as required.

Performance Standard

Signs should be easily located and legible with no signs of vandalism.

4. Plant Material

Monthly

- Visually inspect for diseases. Treat as required.
- Inspect for **broken**, dead or hazardous vegetation. Replace as required.

Performance Standard

- Vegetation should have healthy, natural appearance.

5. Gravel Roads/Parking Areas

Monthly

- Inspect for sink holes and erosion gullies. Repair as required.
- Inspect for dry and dusty roads. Calcium Chloride as required.
- Inspect for smooth surface. Blade as required.

Performance Standard

Negative visitor comments on roadside areas should decrease.

6. Gravel and Brushed Trails

Monthly

- Remove all hazardous material.
- Inspect for erosion. Repair as required.
- Cut back all encroaching vegetation.

Performance Standard

Trail should be safe to walk and easily followed.

7. **Waterfronts**

Monthly

- Visually check waterfronts and remove obvious hazards, debris and litter.

Performance Standard

Waterfronts should be visually attractive and not contain undue hazards.

8. Garbage **Collection**

Weekly

- Collect garbage weekly.
Wash out cans and enclosure with germicidal cleanser as needed.

Performance Standards

- Garbage enclosures should not smell offensive.
- Garbage cans should not regularly be more than 3/4 **full** at collection time.

5.0 LANDSCAPE GUIDELINES

Landscape guidelines do not tend to be generic as they should reflect the individual site conditions where development will occur.

The following are presented only as very broad guidelines and should be seen as preliminary guidelines to site development.

An excellent series of recommendations, guidelines and design sketches is available through Alberta Recreation and **Parks**, ‘The Park Design Series’. These are a series of blueprints with a topic a sheet created for the smaller, less urban park developments. **These** would be easily adapted to the **NWT** and because of the geographic location of Highways **2, 5** and **6**- most all of the Alberta guidelines would carry over well.

campsites

Sites should be developed on upper, well drained soils in areas of mixed vegetation.

- A mix of canopy and **understorey** is desirable.

Sites should be brushed out and **levelled** with gravel added as needed. Slope should not exceed 5% on site.

In areas of dense underbrush, vegetation should be feathered back from gravel edge or site size increased.

Sites **should** receive a mix of sun and shade. In **NWT**, given the cooler summers, sun exposure should be maximized without removing all canopy.

Sites should be situated for wind exposure to reduce bug problem.

- Tenting areas should be sandy well drained areas for comfort and ease of maintenance. Wooden platforms may be provided in wet, rocky or extremely windy areas.

Each campsite should consist of an “L” shaped spur with a stove and table in the living areas to the passengers side of a backed in vehicle.

- Buffers between sites are not necessarily a standard distance but vary according to desired experienced - wilderness or **urban, density** of **understorey**, topography and land availability.

- Campground layouts should follow the natural topography taking advantage of existing level areas.
- For greater detail on campground layouts and site design; refer to the Park Design Series available through Alberta Recreation and Parks, Recreation Development Division.

Vegetation

Native species should be used in **all** developments except those that are highly urban where the intent is not to represent the natural environment.

- **All** disturbed slopes should be reclaimed in the same growing season to reduce erosion and cost of reclamation in following years.
- **Groundcovers** and native grasses that require minimal maintenance are recommended over turf seeding.

All developments should mitigate the vegetative and drainage disturbances created.

Drainage patterns should be respected in all developments.

The character of site developments desired in this region will reflect the natural landscape and the preeminence of the natural environment over the built environment. All “improvements” to it will remain in character.

- **Riparian** edges of streams, lakes, marshes and wetlands are very sensitive and should be avoided or mitigated in trail developments.

Trails

- Trails should follow the natural topography of the landscape.
- They should be designed to minimize erosion.
 - Trails should meander, taking the most interesting and scenic routes available without adversely affecting the environment.
- Access to sensitive areas should be avoided; or hardened and controlled to limit impacts.
- Areas of rare vegetation should be avoided

Waterfronts

- Orientation:** - East, West and South orientations are preferable.
- Prevailing winds should blow onshore.
- Backshore:** - Vegetated area < 30 m from water prone to compaction due to shallow soils and roots. Primary dune very sensitive. All development on **backshore** must be designed to stabilize environment edge. Most development should occur behind “primary dune” or **backshore** edge.
- Dry Beach** - Usually waters edge back a max. 30 m or to vegetation.
- Sand should be well drained, clean. Minimum depth 250 mm; maximum slope 5%.
- Wet Beach** - Usually waters edge to 1.5 m depth.
Minimum width for wet beach in good swimming area is 9 m. Any narrower **will** give a steep slope to wet beach.

APPENDIX B
SITES REVIEWED BUT NOT RECOMMENDED

SITES REVIEWED BUT NOT RECOMMENDED

The following list of sites were reviewed and assessed as part of the corridor study but due to a variety of reasons are not recommended as part of the overall corridor system.

Hay River Bridge

Needle Lake

Klewi Lake

Preble Creek Crossing

Dawson's Landing

Little Buffalo River Crossing

Fort Resolution Municipal Campground

Nagle Charnel, Slave River

Salt River

HAY RIVER BRIDGE

HIGHWAY: 5
SITE: Hay River Bridge Highway Crossing
MILEAGE: 2.1 km east of junction of Hwy 2 & 5

EXISTING CONDITIONS & FEATURES:

- . **Site** features combination highway and railway bridge.
- **Existing informal access to the River** on the northwest bank via a gravel road down to the flood plain and informal boat launch.
- . Value of the site is its access to the River for fishing and boat launching and its proximity to Hay River.
- . **This bridge is only one to cross Hay River in the NWT.**

Baker (1966) suggests this location for a “modest picnic site and boat launch”.

RECOMMENDATIONS & RATIONALE

- **No** development at this site. Existing informal launch already **in** use.

Site has no amenity value for anything other than a boat launch.

Existing boat launch area already located in lower town site at Portts Landing. There are existing plans to upgrade this site.

Picnic facilities are better located in Hay River, either at the Tourist Information **Centre** or on Vale Island. The site is too exposed to the highway and **under-**vegetated to be considered interesting enough for even a pull-off. Informal **use** of this site will continue to occur by locals.

PRIORITY: no development.

NEEDLE LAKE

HIGHWAY: 5
SITE: Needle Lake
MILEAGE: **Kilometre** 117.2 Needle Lake Track
Lake is approximately 16 krns. west of Highway.

EXISTING CONDITIONS & FEATURES:

- . **Lake reputed to be one** of the better quality lakes in the park for swimming and fishing.
- . **Area** where a significant second herd of bison was discovered.
- . **Access to lake** is a **16 km.** 4x4 track to a fire tower.
- . No developed tourist facilities here.

RECOMMENDATIONS & RATIONALE

- . No **development for Highway traffic should be** considered for this site due to the distance from the Highway corridor, the condition of the track in and the expense involved in making this site vehicle accessible.
- . Suggestion **was made to consider developing site** for a wilderness **hike/bike-in** campsite by Fort Smith Community.

Wilderness campsite should be considered as site already has an existing fire tower that is manned in the summer. 4x4 track would provide ready access for mountain biking, somewhat boring for hiking.

Developing this site for vehicles would be a duplication of the facilities offered at Sandy Lake at a greater expense. Camping facilities are proposed for Sandy Lake 30 **kilometres** to the north and are already existing at Little Buffalo Falls Park 100 kms. to the south.

PRIORITY: no development

KLEWI LAKE

HIGHWAY: 5

SITE: Klewi Lake

MILEAGE: Kilometre 154.3

Lake is approximately 3 kms. west of the Highway corridor.

EXISTING CONDITIONS & FEATURES:

- Former **picnic site** operated by Wood Buffalo National Park. Recently **closed** due to lack of use.
- . **Lake** has dried **Up significantly in the last few years and** major fire **has** gone through in the last 10 years.

RECOMMENDATIONS & RATIONALE

- Leave **site closed until such time as** there is a significant increase in demand for picnic sites near the road and lake level has returned

This site has low visual and recreational amenity. **Nyarling** River Crossing is more appropriate for a short term pull-off / picnic site because of its immediate access onto the highway.

This site was recommended for development in the Parks **Canada An Assessment of Potential Sites for Roadside Facilities, 1977.**

PRIORITY: no development

PREBLE CREEK CROSSING

HIGHWAY: 5
SITE: Preble Creek Crossing
MILEAGE: Kilometre 184.0

EXISTING CONDITIONS & FEATURES:

- No formalized development to date.
- Existing dirt **pull-off on the south east side** of the creek crossing.
- Remains of a **large beaver dam and house can be** seen from the highway on the up-stream side. Major break in the dam.
- **Dirt pull-offs exist on** both sides of the highway north of the creek.
- Features of this area **would have been** the large beaver **pond**, creek and an active beaver population.

RECOMMENDATIONS & RATIONALE:

- **Leave this site undeveloped at the present.**

The attractiveness of an active Beaver pond no longer exists as a story at this site and there is little other in the way of visual attraction and interest at this site.

The number of tourist vehicles on this highway does not necessitate a large number of picnic sites at this time. At a later date, the recommendation may be made to close picnicking at the smaller Wetland Viewpoint site and make it strictly an interpretive view point. This site, 15 kms. north would then be a logical picnicking stop.

This site was recommended for development in the Parks Canada An Assessment of Potential Sites for Roadside Facilities, 1977.

There are already informal turn-off on both sides of the creek for vehicles to get off the highway in an emergency.

PRIORITY: no development at this time.

DAWSON'S LANDING

HIGHWAY: 6
SITE: Dawson's Landing
MILEAGE: approximately 25 kms. north of Highway 6 at Paulette Bay.

EXISTING CONDITIONS & FEATURES:

- . 4x4 track into the old **fish** cannery site on **Dawson's** Point.
- Building burnt down.
- . Area **criss-crossed** with seismic lines and mineral exploration access roads.

RECOMMENDATIONS & RATIONALE

- **No development at this site; too far from the highway.**

PRIORITY: No development.

LITTLE BUFFALO RIVER CROSSING

HIGHWAY: 6
SITE: Little Buffalo River Crossing
MILEAGE:

EXISTING Conditions & FEATURES:

- **Existing highway pull-off on south west side of crossing.** Not a regulation pull-through highway site but has garbage containers.
- Community of about 20 dwellings located within site distance of the bridge on the east side mouth of the river at the Lake.
- . **River has good fishing** and area is scenic.

RECOMMENDATIONS & RATIONALE

- **No development recommended at this time.**
- **Informal use of this site as a pull-off will probably continue.**

The community has indicated they are pursuing development and use of this site on a commercial basis with some of the people that live in this community.

PRIORITY: no development at this time.

FORT RESOLUTION MUNICIPAL CAMPGROUND

HIGHWAY: 6
SITE: Fort Resolution Municipal Campground
MILEAGE: 1 km. west of Fort Resolution

EXISTING CONDITIONS & FEATURES:

- Existing small campground located in a low area between the highway and the Lake.
.5 camping bays.
- Not used by tourists.
- In poor repair. Subject to seasonal flooding.

RECOMMENDATIONS & RATIONALE:

- Close this campground, relocate campers to Mission Island.

PRIORITY: no development.

NAGLE CHANNEL, SLAVE RIVER

HIGHWAY: 6
SITE: Nagle Charnel/Slave River Site
MILEAGE: Winter road only and not fully developed.

EXISTING CONDITIONS & FEATURES:

- Informally used site at the confluence of the Slave River and the Nagle Channel.
- **Winter** road access to the site.

RECOMMENDATIONS & RATIONALE:

- **No tourism development of boating facilities at this site as community desires to maintain some control over the boating industry.**
- **Good site for community boat launch and seasonal dock.**

This is a remote area, but improved access would allow greater use of the area by outfitters, guides and river trippers.

This may be a good site for a commercial lodge.

PRIORITY: None - community use only.

SALT RIVER CROSSING

HIGHWAY: 5
SITE: Salt River Crossing
MILEAGE: Kilometre 237.6

EXISTING CONDITIONS & FEATURES:

- Highway bridge crossing over the Salt river with farms on each side of the river.
- Informal use of the crossing for hand boat launching.

RECOMMENDATIONS & RATIONALE

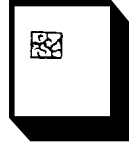
- No site development proposed for traveling tourists.
- Local use of site for canoe launch is sufficient that minor improvements to the launch site with a trail from nearest parking pull-off would be warranted.
- The story of farming in the NWT is interesting and unique to the south slave area. This story best told in the road log book.

PRIORITY: No development at present.

**APPENDIX C
PARK SYMBOLS KEY**



PORTAGE



ORIENTATION MAP



FISHING



WASHROOMS



BOAT TIE-UP



PLAYGROUND



LAUNCH RAMP



VIEWING



SKIING



CAMPING



BICYCLING



SHELTER



HIKING



TRAILER PUMP-OUT



BACKPACKING



TRAILERS



INTERPRETIVE TRAIL



SHOWERS



INFORMATION



LITTER CONTAINER



TELEPHONE



LITTER



EXPOSITION



PORTABLE WATER



PARKING



PICNICKING



SNOW MOBILING



FIRE WOOD



CROSS-COUNTRY SKIING



FIRES



ALL TERRAIN VEHICLES



GROCERIES



GOLF



RESTAURANT



HUNTING



GASOLINE



CANOEING

**APPENDIX D
DOCUMENT REFERENCES**

**APPENDIX D
DOCUMENTATION:**

Avens Associates Ltd., Highway #1 Corridor Study, cerlox report, Yellowknife, NWT, 1989.

Baker, W., A Masterplan for the Development of Tourist and Recreational Potential Along the Mackenzie and Yukon Highways, 1986.

Chambers, D., Alberta Recreation and Parks, Review of the MacKenzie Highway Territorial Park System, looseleaf, 1982.

Derek Murray Consulting Associates Inc. A Product Development Plan for the Northwest Territories Tourism Industry, cerlox report, Regina, Saskatchewan, 1987.

EDA Collaborative Ltd, Highway #3: Corridor Study, cerlox report, Edmonton, AB., 1987.

GNWT, Department of Economic Development and Tourism, Opportunities for Growth: Parks in the Northwest Territories - Draft, photocopy, Tourism and Parks, 1989.

GNWT, Department of Economic Development and Tourism, Parks Sign Manual - Draft, Yellowknife, 1989.

GNWT, Fort Smith Economic Development and Tourism, Inventory of Potential Territorial Parks in the Northwest Territories, looseleaf, 1988.

GNWT, Travel Arctic, Tourism Facts 1987, Department of Economic Development and Tourism, Yellowknife, 1987.

GNWT, Travel Arctic, 1989 Explorers' Guide, magazine, Outcrop Ltd., Yellowknife, NWT, 1989.

Northern Frontier Visitors' and Big Rivers Travel Associations, Rivers to Roads, booklet, 19---

Parks Canada; Don Pike, Planning Division, An Assessment of Potential Sites for Roadside Facilities - Wood Buffalo National Park, Indian and Northern Affairs, 1977.

Parks Canada, East Arm Of Great Slave Lake National Park Proposal, Ministry of the Environment, 1985.

Parks Canada; Socio-Economic Division, Prairie Region, Wood Buffalo National Park - Socio-Economic Statement on the Recommended Management Plan, 1983.

Parks Canada, Wood Buffalo National Park Interpretive Concept Plan,

Project Planners, Mission Island Master Plan, cerlox report, Toronto 1981/2.

Ross & Borowiecka, Little Buffalo Falls Territorial Park Masterplan, Economic Development and Tourism, 198S.

UMA Engineering Ltd., Hay River - Enterprise Corridor Background Report, cerlox report, Edmonton, AB., 1988.

APPENDIX E
RESOURCE LIST OF CONTACT PERSONS

APPENDIX E

RESOURCE LIST OF CONTACT PERSONS

**A) Fort Smith Meetings
July 31'89, Oct 6'89, Jan 10'90**

Jacques van Pelt
Subarctic Wilderness Adventures
Box 685,
Fort **Smith, NWT**
XOE OPO
872-2467

Lynda Wilson
c/o **Thebacha** College
Fort Smith

Shirley Vandenberg
Northern Visions
Box 1086
Fort **Smith, NWT**
XOE OPO

Dennis **Bevington**
Mayor, Fort Smith
Box 147
Fort **Smith, NWT**
XOE OPO

Chuck Carson
Economic Development Officer
Town of Fort Smith

Jim Gabriel
Recreation Director
Fort Smith

Jim Green
Chair - Big River Travel Association
Raconteur

OTHERS MENTIONED OR TELEPHONED - FORT SMITH AREA

John Hodgkins

Ex-principal from Pine Point school now living in Fort Smith

Bernice Bergman

Contact regarding **Nyarling** River Bison Farm

872-7337

872-7331

Alex Hall, (resigned)

Ex-Chairman of the Tourism Committee

Ron Gras

Regional Biologist

872-7338

Clayton Burke

River Trails North

Private guide on the Little Buffalo and Salt Rivers

Box 852

Fort **Smith**, NWT

XOE OPO

872-2060

Forestry:

Bill Molychuk

Supt. of Renewable Resources

Fort Smith

DPW, Fort Smith

Parnel Lavechk

Asst. Regional Manager, Fort Smith area

872-7307

Rangid,

Project Officer

872-7274

Ryan Murray

872-7329

Land Permits:
Fort Smith 872-2558
Yellowknife -
Jim Mumfordson 920-8165

**B) Fort Resolution Meetings
August 2'89, Oct 5'89, Jan 10'90**

Cecil Lafferty
Settlement Manager
394-4556

Bernadette Unca
Band Council Chief
394-5351 or 394-3401

Don **Balsillie**
Fort Resolution **NWT**
394-3141, Band office 394-4556
outfitter and guide
Land claims advocate and negotiator

Ron **Boucher**
President Hunters and Trappers Assoc. and Band Council Member
Band Office 394-4556

Robert **Sayine**
Band Council Member

Clifford Cardinal

Lloyd Cardinal
Nuni (Ye) Development Corp.
Band **Office**

Joe Fabian
Citizen at large

c) **Wood Buffalo National Park**
July 31, Aug 3, Oct 6'89

Mike Rosen
Chief Visitor Services
872-2649

Ken East
Superintendent
872-2649

John Aldag
Interpreter
872-2649

Canadian Parks Service - Prairie Region
Confederation Building
4th floor 457- Main st. Winnipeg, Man.
R3B 3E8
Stan Hnatiuk
Socio-Economic Branch
Visitor Survey WBNP
204-983-5192

D) **Hay River**
Aug 1, Oct 4'89, Jan 9'90

GNWT Renewable Resources:
Tom **Chowms**
Officer III
874-6702

Allan Helmer, met Aug 1'89
Officer 11
874-6702
(used to have Fort Res. District)

Jim **Beaulin**
Officer II?

Jack **Lamoreux** met Aug 1'89
Economic Development **Officer**
GNWT
874-6772
Moved to Hinton Sept. '89

Al Manilot (Milo)
Hay River Dene Band
Economic Development **Officer**

Eileen Vail
Former Town Economic Development Officer
on Tourism Advisory Group
New # after Oct. 30--874-2520

Dale Robertson
Head of the Tourism Committee
Town Council Liaison
Town **Office**
Bag 5000
Hay River, **XOE ORO**

Ron Whittaker
Golf Club Director
874-3356
Field Service **officer, GNWT**
874-6771

Vicky **Latour**
Editor
THE HUB
Box 1250, Hay River, **XOE ORO**
874-6577

Chuck **Davidge**
Ptarmigan Inn
874-3565

Jane **Groewegean**
Harbour House
874-2151

· Tom **Laing**
Tour operator
Box 1216, Hay River
874-6636

Sandra **Lester**
Bakery owner
874-2322wk
874-2401hm
874-2311 fax

Irene **Kudelik**
Tucho **Tours**
874-6686wk
874-6778hm

Richard **Haas**
Lions Club,
Vale Island Campground Management Committee
874-5540wk
874-2705hm

Ray Benoit
Vale Island Campground Attendent
874-3772 campground
874-6862 hm

OTHERS:

Wayne **Barraclough**
MACA
920-8603

Leo **Bourassa**
Manager ID 18 North
Fort McMurray
743-7162

Peter **Vician**
Base Mapping Hwy 2
873-7647

Terry **Hauf**
MACA Yellowknife
(mapping)
920-8772

Larry **Purka**
Highways mapping 873-7802

Keith Thompson
Market Research
GNWT
873-7320

Cominco (ex Pine Point)
Vancouver (604) 263-1212