

CITY OF MERRITT

AGENDA

BUDGET DELIBERATIONS

CITY HALL
2185 Voght Street
Merritt, B.C.

Tuesday, March 16, 2010

At 4:45 p.m.

AND

Thursday, March 18, 2010

At 4:45 p.m.

Mission Statement: The City of Merritt is a progressive, attractive, economically viable City that is socially responsible and environmentally sustainable.

Council

Mayor Susan Roline

Councillor Dave Baker

Councillor Mike Goetz

Councillor Nadia Hunter

Councillor Harry Kroeker

Councillor Alastair Murdoch

Councillor Shelley Sanders

Country Music Capital of Canada

For Enquiries
Telephone - (250) 378-4224
www.merritt.ca



CITY OF MERRITT

A G E N D A

BUDGET DELIBERATIONS
COUNCIL CHAMBER, CITY HALL
TUESDAY, MARCH 16, 2010
AT 4:45 P.M.
AND
THURSDAY, MARCH 18, 2010
AT 4:45 P.M.

1. PRESENT

2. CALL TO ORDER

3. BUDGET DELIBERATIONS

**2010 BUDGET
MEETING MINUTES**

- 3.1 Minutes for the Budget Presentations and Deliberations held to date *(For Council Information Only)*

RED CIRCLED ITEMS

- 3.2 Red Circled Items
File: 1705

**2011-21014 FIVE YEAR
FINANCIAL PLAN**

- 3.3 Five Year Financial Plan *(To be circulated after March 16, 2010 meeting)*
File: 1705

4. INFORMATION ITEMS

LANDSLIDES

Page 4-13

- 4.1 Three Landslides in Merritt; Golder Associates March 04, 2010 Proposal
File: 1705

ARC GIS SERVER

Page 14-52

- 4.2 ARC GIS Server; ArcGIS Server Functionality Matrix
File: 1705

5. TERMINATION OF MEETING

Shawn Boven

From: Shawn Boven
Sent: March-05-10 8:02 AM
To: Joe Calenda
Cc: 'Marlie Worrin'; Carole
Subject: FW:
Attachments: Three Landslides in Merritt.pdf

Good morning Joe,

I have received an update on the landslip issues from Golder Associates. I currently have a budget request sheet in for \$10,000 but it looks like it will be more in the order of magnitude of \$46,750 to engineer these sites. That doesn't include construction of course and that would probably have to be budgeted in 2011 if Council was desirous in dealing with these issues. The initial assessment cost \$2,700 which really brings the scope of this project to \$49,450.

Marlie can you please adjust budget sheet accordingly and have this material at the next budget meeting?

Thanks,

Shawn

From: Thibeault, Matthew [mailto:Matthew_Thibeault@golder.com]
Sent: March-04-10 3:45 PM
To: Shawn Boven
Subject:

Shawn, attached is our proposal for the three landslides. Please let me know if you have any questions.

Regards

Matt

Matthew Thibeault (P.Eng.) | Associate | Golder Associates Ltd.
929 McGill Road, Kamloops, British Columbia, Canada V2C 6E9
T: +1 (250) 828 6116 | F: +1 (250) 828 1215 | E: Matthew_Thibeault@golder.com | www.golder.com

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Please consider the environment before printing this email.

TABLE 1 - STANDARDS FOR VARIOUS ROAD CLASSIFICATIONS

| <u>Road Classification</u> | <u>Right-of-way Width</u> | <u>Pavement Width</u> | <u>Lane Widths</u> | <u>Curb & Gutter</u> | <u>Sidewalks</u> | <u>Shoulder Width</u> |
|--|---------------------------|-----------------------|--------------------|--------------------------|--|-----------------------|
| <u>Highway Standard 1 - For all Service Level 1 areas delineated in Schedule "A"</u> | | | | | | |
| Arterial (4-lane divided) | 27.0m | 15.0m | 3.75m | both sides | 2.0m one side | not required |
| Collector (2-lane) | 20.0m | 13.0m | 3.75m | both sides | 1.2m one side | not required |
| Local (2-lane) | 20.0m | 11.0m | 3.00m | both sides | 1.2m one side | not required |
| Cul-de-sac | | | | | | |
| a) Entrance | 20.0m | 8.5m | 3.00m | both sides | 1.2m one side | not required |
| b) Terminus | 15m radius | 11.5m radius | | around bulb | 1.2m one side (halfway around bulb) | |
| Industrial/Commercial (2-lane) | 20.0m | 11.0m | 5.5m | both sides | not required | not required |
| Lanes | 6.0m | 6.0m | 3.0m | not required | not required | not required |
| <u>Highway Standard 2 - For all Service Level 2 areas delineated in Schedule "A"</u> | | | | | | |
| Arterial (2-lane) | 27.0m | 8.5m | 4.0m | not required | not required | 2.0m |
| Collector | 20.0m | 8.5m | 3.5m | not required | not required | 1.5m |
| Local | 20.0m | 8.5m | 3.5m | not required | not required | 1.5m |
| Cul-de-sac | | | | | | |
| a) Entrance | 16.0m | 7.0m | 3.5m | not required | not required | 1.5m |
| b) Terminus | 15m radius | 11.5m radius | | | | |
| Industrial/Commercial | 20.0m | 8.5m | 3.5m | not required | not required | 1.5m |
| Lane | 6.0m | 6.0m | 3.0m | not required | not required | 1.5m |

(B.2)

March 4, 2010

Project No. 10-1494-0036

Mr. Shawn Boven
City of Merritt
2185 Voght Street
Merritt, BC
V1K 1B8

**PROPOSAL FOR GEOTECHNICAL ENGINEERING SERVICES
SCOPE OF WORK FOR THREE LANDSLIDES, MERRITT, BC**

Dear Mr. Boven:

As requested by the City of Merritt (City), Golder Associates Ltd. (Golder) is pleased to offer geotechnical engineering services in support of the assessment of remedial options for three landslides that were observed by Golder on February 10, 2010.

1.0 INTRODUCTION

It is understood that the client proposes to stabilize three landslides within the City of Merritt. The landslides of concern are described below.

Parker Drive Slide

Historically, landslide activity along the escarpment on the south side of Parker Drive has been an issue. To increase stability of the escarpment, Golder was involved in the design of a subdrain beneath a portion of Parker Drive in the 1980s. The subdrain installation terminated near the east property line of the subject property. The current landslide involves a gully in the backyard of 1938 Parker Drive, where a portion of the gully's sidewalls are failing by toppling. The outlet for the subdrain beneath the street once crossed the subject property and daylighted near the end of the gully. Reportedly, the pipe became disconnected for a period of time and was draining in the vicinity of the current landslide activity. It is understood that the City stopped using the daylight outlet about two years ago when the street subdrain outlet was re-routed to a storm sewer.

The current landslide involves the toppling failure of the western sidewall of the gully, which is comprised of a lacustrine silt/clay deposit. The existing vertical scarp is about 2.5 m high, with an approximately 3 m high slope standing at about 1 Horizontal to 1 Vertical (1H:1V) below the scarp. The flattish area beyond the toe of the gully sidewall is completely saturated, is covered with bull rushes, and appears to be a groundwater spring. A portion of the north sidewall (or beginning of the gully) has reportedly failed in the past, and is located about 20 m from the residence.



Coldwater River Slide

The Coldwater River slide involves the toppling failure of an approximately 15 m high lacustrine silt/clay bank due to erosion at the toe by the Coldwater River. Progressive erosion and an associated series of toppling failures has resulted in the loss of a significant amount of land as the bank has retrogressed to and partly undermined the property line of a residence on Fir Avenue. The failure is approximately 30 m long, with a vertical 15 m high backscarp, and is currently about 35 m from the residence. The face of the back scarp appeared dry at the time of our visit, and the vertical back scarp suggests that the failure mechanism is toe erosion. The river was approximately 1.5 m deep at the time of our visit, and the river channel was about 4 m across.

Houston Street Rock Slide

The Houston Street rock slide involves the failure of the south side of a through cut that was constructed in about 1995. The slide occurred within an inter-layered sequence of weak carbonaceous siltstone and sandstone. The slide appears to be the reactivation of a pre-existing slide. This opinion is based on a small back tilted ridge behind the crest of the slide, and the observation of what is likely gouge or very weak siltstone (with the consistency of soil) along the toe of a portion of the existing backscarp. The slide is about 18 m wide across the top, and 33 m long from crest to toe. The slide runout is standing at about 22 degrees and the vertical backscarp is about 4 to 5 m high. Reportedly, two or three failures have occurred since the through cut was developed, and the last failure that occurred in December of 2009 reached the centerline of the road. Groundwater seepage was observed along the toe of the cut slope immediately west of the slide, and some of the slide runout appeared to be wet. The appearance of many tension cracks within the slide runout and along the toe of the backscarp indicates that movement is ongoing, and future retrogression/failure of the backscarp is anticipated.

The original slide (prior to the through cut) likely occurred because the area is a local high point, and a sandstone cap that was observed immediately east of the slide stops at the east margin of the slide due to the geometry/orientation of the sandstone bedding. This area also appears to be a groundwater discharge zone, and the gouge or very weak siltstone observed immediately below the west half of the backscarp appeared to be wet.

2.0 PROPOSED SCOPE OF WORK

The following scope of work is proposed for each of the slides.

Parker Drive Slide

The likely cause of the on-going toppling failure of the gully sidewalls is the existence of groundwater discharge in the gully bottom. We anticipate that lowering the groundwater table will stop the retrogression, however, the vertical section of backscarp is over steepened, and will achieve an angle of repose over time, possibly of the order of 1H:1V, or potentially to 1.5H:1V. The subsequent failures involved with achieving angle of repose, will likely be contained within the subject property, and should not affect the residence. Once the groundwater table is lowered, and the soils become more firm, there may be an opportunity at that time to construct a retaining wall to reclaim some of the lost property, if desired. However, the first phase should be intercepting and lowering the groundwater table to stop the on-going slope failures.

We propose the design and construction of French drains, likely two to three, which drain to a solid pipe that extends to the bottom of the gully. If effective in intercepting the groundwater seepage, the French drains should lower the groundwater table and stabilize the gully sidewalls.

The scope of work should include a test pit investigation, involving the excavation of two to three test pits, in support of the French drain design, and to help anticipate difficulties that may be encountered during construction, with respect to installing French drains in saturated soil. A standpipe piezometer would be installed in one of the test pits to help assess the effectiveness of the French drains after construction. The option of constructing a retaining wall, if desired, should be assessed after French drains have been installed, and some time has passed to drain the soil, to properly assess foundation conditions. Assuming that the de-watering is successful, and depending on the type of retaining wall that is being considered, a wall foundation may include sub-excavation and the placement of a base layer.

Coldwater River Slide

This project requires a scope of work that will support a rip rap design for erosion protection at the slope toe. Subject to detailed design, the rip rap might be extended up the vertical face of the scarp to cover approximately the bottom third of the scarp. Construction of the rip rap is the challenging aspect of the project, because it will entail instream work. This project will require input from a geotechnical engineer, a hydrologist, and a fisheries biologist. The geotechnical engineer will provide project management, the general design of the rip rap, and will provide input towards the construction plan. Local contractors capable of conducting the work should be consulted to devise an appropriate construction methodology. The fisheries biologist will assess the existing habitat of the site, and will liason with Fisheries and Oceans Canada (DFO), and the Ministry of the Environment (MoE), and prepare submissions to the regulators for permitting purposes. The hydrologist will conduct an analysis of the expected flows, assess potential changes to the existing channel that may result from placing rip rap, and will provide a suitable rip rap gradation.

The proposed work plan and various assessments will need to be reviewed by MoE, DFO, and potentially Transport Canada under the provisions of the Navigable Waters Protection Act. Depending on the MoE and DFO reviews, offsite habitat compensation may be requested if they believe that the project constitutes a loss of habitat. This proposal does not have an allowance for habitat compensation work. Several cross sections of the river will need to be provided, under direction of the hydrologist, to illustrate the stream gradient, and to show the effect the rip rap will have on the river channel.

The window for construction will likely be during the months of July or August, based on fishery requirements. A suitable source of rip rap needs to be found, one which does not have acid rock drainage (ARD) or metal leachate potential (ML). We have included an allowance for ARD and ML testing that would be conducted in our Surrey lab, if required.

Assuming placement of rip rap to cover the lower third of the slope, the vertical slope above the rip rap would retrogress over time, likely to eventually reach an angle of the order of 1H:1V (similar to the slope immediately east (up river) of the site), and therefore, about 6 to 10 m of property will likely be lost before the slope stabilizes. The option of extending the top of rip rap to the 200 year flood level (approximately 594 m asl) will also be considered, which may result in the eventual loss of more property. All of these comments are preliminary and subject to detailed design.

Houston Street Rock Slide

Future slope failures and retrogression of the backscarp is anticipated. We recommend that the slope stability of the slide be modelled, to analyse the feasibility of constructing a berm or retaining wall at the toe that would catch future slides, and potentially stop the on-going movement of the slide runoff. The scope of work would involve a site visit to excavate one or more test pits within the slough at the toe, to observe groundwater

conditions and the depth to undisturbed rock (if possible), and we would measure the dimensions of the slide. Historical air photos from before the construction of the Houston Street through-cut would be reviewed to assess the possible presence of a pre-existing slide. We would use the results of the limited investigation to prepare a slope stability model to determine whether a toe berm or retaining wall would be effective. Ideally, a toe berm would be constructed of rockfill, however, sand and gravel can sometimes be used for this purpose. If a toe berm is proven effective, we would provide the berm dimensions and construction specifications. Alternatively, an MSE type retaining wall may prove to be an effective solution, if a suitable foundation for the wall facing is encountered at a practical depth.

With a toe berm or retaining wall in place, retrogression of the back scarp will continue, but the berm or retaining wall would presumably contain future runouts from reaching the road, and the material caught behind the berm could be cleaned out from time to time. It is anticipated that retrogression of the backscarp will attenuate over time, and quite possibly stop once the original backscarp is reached. It appeared during the site visit that the back tilted bench would need to fail before the original back scarp is reached, which is approximately 5 m (horizontal) of ground that is likely to fail in the future.

3.0 COST ESTIMATES

The cost estimates for consulting services for the design of remedial treatments for the three landslides are provided in the tables below. It should be noted that the estimated cost does not include site reviews and/or testing during construction.

| 1938 Parker Drive Slide | Cost Estimate |
|--|-----------------|
| Task 1: Travel to site, field work for test pit investigation and slope measurements, including travel time, time on site and expenses Excavator hire | \$1000 \$700 |
| Task 2: Engineering analysis, french drain design, short geotechnical report with conceptual drawings, senior review | \$3,000 |
| Total (Excluding GST) | \$4,700 |

| Coldwater River Slide | Cost Estimate |
|---|-----------------|
| Task 1: Rip rap design, site visit with hydrologist and biologist, project management, reporting, senior review | \$6,000 |
| Task 2: Hydrology and biology assessments, permit applications, rip rap gradation design | \$10,000 |
| Task 3: Surveying cross sections of stream channel | \$3,000 |
| Task 4: Acid Rock Drainage and Metal Leachate Potential testing of proposed rip rap | \$5,000 |
| Total (Excluding GST) | \$24,000 |

| Houston Street Rock Slide | Cost Estimate |
|--|----------------|
| Task 1: Travel to site, field work for test pit investigation and slope measurements, including travel time, time on site and expenses | \$1000 |
| Backhoe/excavator hire | \$700 |
| Task 2: Slope stability model, engineering analysis, reporting, senior review | \$4,500 |
| Task 3: Provisional allowance for MSE retaining wall design | \$2,500 |
| Total (Excluding GST) | \$8,700 |

All work will be conducted in accordance with our current Schedule of Fees and the "Authorization to Proceed and Consulting Services Agreement" form, attached. If you are in agreement with these provisions, please sign and return a copy of the attached "Authorization to Proceed and Consulting Services Agreement" form to Golder, indicating any billing instructions you may have. It is assumed that this work will be carried out when there is no snow on the ground. This proposal is valid for a term of one year, at which time our proposed costs should be reviewed.

4.0 CLOSURE

We look forward to working with you on this project. Please contact the undersigned if you have any questions or concerns relating to the indicated methodology, schedule and costs, or if you require further information or assistance.

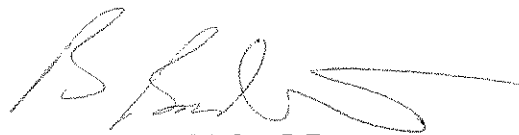
We appreciate the opportunity to be of service.

Yours truly,

GOLDER ASSOCIATES LTD.



Matt Thibeault, P.Eng.
Associate/ Senior Geotechnical Engineer



Bruce Bosdet, M.A.Sc., P.Eng.
Principal/ Senior Geotechnical Engineer

MT/BB/rvk

Attachments: Authorization to Proceed and Consulting Services Agreement
Schedule of Fees



Authorization to Proceed and Consulting Services Agreement

City of Merritt ("Client") and Golder Associates Ltd. ("Golder") agree that the following terms and conditions will apply to any services, including subsequent services and changes, (collectively "Services") to be provided by Golder relating to Proposal No. 10-1494-0036, dated March 4, 2010 (collectively the "Agreement").

1. **Standard of Care** - Services performed by Golder will be conducted in a manner consistent with that level of care and skill ordinarily exercised by other professionals currently practicing under similar conditions in the same locality, subject to the time limits and financial, physical or other constraints applicable to the Services. No warranty, express or implied is made.

2. **Invoices and Payment Terms** - Unless otherwise specified in the proposal, Golder will submit monthly invoices to Client and a final bill upon completion of Services. Client shall notify Golder within ten (10) days of receipt of invoice of any dispute with the invoice and the parties shall promptly resolve any disputed items. Full payment is due prior to delivery of Golder's final deliverable. Payment on undisputed invoice amounts is due upon receipt of invoice by Client and is past due thirty (30) days from the date of the invoice. Client agrees to pay a finance charge of one and one-half percent (1-1/2%) per month (18% per annum), or the maximum rate allowed by law, on past due accounts. If payment remains past due sixty (60) days from the date of the invoice, then Golder shall have the right to suspend or terminate all Services under this Agreement, without prejudice or penalty. Client will pay all reasonable demobilization and other suspension or termination costs. Client agrees to pay all legal and collection costs incurred by Golder in pursuit of past due payments. Where the cost estimate for the Services is "not to exceed" a specified sum, Golder shall notify Client before each limit is exceeded, and shall not continue to provide Services beyond such limit unless Client authorizes an increase in the amount of the limitation. If a "not to exceed" limitation is broken down into budgets for specific tasks, the task budget may be exceeded without Client authorization as long as the total limitation is not exceeded.

3. **Changes** - Client and Golder recognize that it may be necessary to modify the scope of Services, schedule, and/or cost estimate proposed in this Agreement. Such changes shall change the Services, schedule, and/or the cost, as may be equitable under the circumstances. If after a good faith effort by Golder to negotiate modifications to the scope of Services, schedule, and/or cost estimate, an agreement has not been reached with the Client, then Golder shall have the right to terminate this Agreement, without prejudice or penalty, upon written notice to the Client.

4. **Delays and Force Majeure** - If site or other conditions prevent or inhibit performance of Services or if unrevealed hazardous waste materials or conditions are encountered, Services under this Agreement may be delayed. Client shall not hold Golder responsible for damages or delays in performance caused by acts or omissions of Client, its subcontractors, governmental authorities, regulatory agencies, civil or labour unrest, acts of God, nature, or terror, disruptions of the Internet, Golder's electronic, telecommunications or hosting services or any other events that are beyond the reasonable control of Golder. In the event of any such delay, the contract completion date shall be extended accordingly and Client shall pay Golder for Services performed to the delay commencement date plus reasonable delay charges. Delay charges shall include personnel and equipment rescheduling and/or reassignment adjustments and all other related costs incurred including but not limited to, labour and material escalation, and extended overhead costs, attributable to such delays. Delays in excess of thirty (30) days within the scope of this Article shall, at the option of either party, make this Agreement subject to termination or to renegotiation.

5. **Independent Judgments of Client** - If the Services include the collection of samples and data, then Golder's performance of the Services is subject to Client's assumption of all Subsurface Risks (such risks being more fully described in Article 12, Subsurface Risks). Golder will not be responsible for the independent conclusions, interpretations or decisions of Client, or others, relating to the Services. Under no circumstances do Golder's Services include making any recommendation, or giving any advice as to whether Client should or should not proceed with any transaction regarding any site related to the Services. Client assumes all responsibility and risk associated with decisions it makes based on the Services.

6. a) **Indemnification by Golder** - Golder agrees to indemnify Client and its officers, directors, and employees from and against all claims, damages, losses or expenses (including but not limited to reasonable legal fees) arising from personal injury, death, or damage to third-party property to the extent that all claims, damages, losses or expenses are finally determined to result directly from Golder's negligence. Such indemnification, as limited by Article 7 Limitation of Liability, shall be Client's sole and exclusive remedy against Golder.

b) **Indemnification by Client** - Client shall, at all times, defend, indemnify and save harmless Golder and its subcontractors, consultants, agents, officers, directors and employees from and against all claims, damages, losses and expenses, including but not limited to reasonable attorneys' fees, court and arbitration costs, arising out of or resulting from the Services of Golder, including but not limited to claims made by third parties, or any claims

against Golder arising from the acts, errors or omissions of Client, its employees, agents, contractors and subcontractors or others. To the fullest extent permitted by law, such indemnification shall apply regardless of breach of contract or strict liability of Golder. Such indemnification shall not apply to the extent that such claims, damages, losses or expenses are finally determined to result directly from Golder's negligence.

7. **Limitation of Liability** - Client agrees to limit the liability of Golder, its affiliates, and their respective employees, officers, directors, agents, consultants and subcontractors ("Golder Group") to Client, its employees, officers, directors, agents, consultants and subcontractors, whether in contract, tort, or otherwise, which arises from Golder's acts, negligence, errors or omissions, such that the total aggregate liability of the Golder Group to all those named shall not exceed Fifty Thousand Dollars (\$50,000) or Golder's total fee for the Services rendered under this Agreement, whichever is greater. Neither party shall be responsible to the other for lost revenues, lost profits, cost of capital, claims of customers, loss of data or any other special, indirect, consequential or punitive damages.

8. **Insurance** - Golder maintains insurance coverage with the following limits:

| | |
|---|-------------|
| a) Workers' Compensation (statutory limits) | |
| b) Automobile Liability | \$1,000,000 |
| c) Commercial General Liability: | |
| Each Occurrence | \$1,000,000 |
| Policy Aggregate | \$2,000,000 |
| d) Professional Liability Insurance | |
| Any One Claim | \$1,000,000 |
| Policy Aggregate | \$3,000,000 |

9. **Professional Work Product** - The Services provided by Golder are intended for one time use only. All documents, including but not limited to, reports, plans, designs, boring logs, field data, field notes, laboratory test data, calculations, and estimates and all electronic media prepared by Golder are considered its professional work product (the "Documents"). Golder retains all rights to the Documents. Client understands and acknowledges that the Documents are not intended or represented by Golder to be suitable for reuse by any party, including, but not limited to, the Client, its employees, agents, subcontractors or subsequent owners on any extension of a specific project not covered by this Agreement or on any other project, whether Client's or otherwise, without Golder's prior written permission. Any reuse unauthorized by Golder will be at Client's sole risk.

10. **Data and Information** - Client shall provide to Golder all reports, data, studies, plans, specifications, documents and other information ("Project Information") which are relevant to the Services. Golder shall be entitled to rely upon the Project Information provided by Client or others, and Golder assumes no responsibility or liability for the accuracy or completeness of such or the impact any inaccurate Project Information may have on Golder's Services.

11. **Right of Entry** - Client will provide for the right of entry for Golder, its subcontractors, and all necessary equipment in order to complete the Services under this Agreement. If Client does not own the site, Client must obtain permission and execute any required documents for Golder to enter the site and perform Services. It is understood by Client that in the normal course of work some surface damage may occur, the restoration of which is not part of this Agreement.

12. **Subsurface Risks** - Special risks, including but not limited to injury to underground structures or utilities and unavoidable contamination, occur whenever engineering or related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing program implemented in accordance with a professional Standard of Care may fail to detect certain conditions. The environmental, geological, geotechnical, geochemical, hydrogeological and other conditions that Golder interprets to exist between and beyond sampling points may differ from those that actually exist.

13. **Disposal of Samples, Materials and Contaminated Equipment** - All samples obtained pursuant to this Agreement remain the property and responsibility of Client. Uncontaminated soil and rock samples or other specimens may be disposed of thirty (30) days after submission of the directly related work product, due pursuant to the proposal. All contaminated samples, materials and equipment (containing or potentially containing hazardous constituents), including, but not limited to soil cuttings, contaminated purge water, and/or other environmental wastes obtained pursuant to this Agreement remain the property and responsibility of Client and shall be returned to Client for proper disposal. Alternate arrangements to assist Client with proper disposal of such equipment, materials and/or samples may be made at Client's direction and expense.

14. Control of Work and Job-Site Safety - Golder shall be responsible only for the activities of its employees and subcontractors. Golder's Services under this Agreement are performed for the sole benefit of the Client and no other entity shall have any claim against Golder because of this Agreement or the performance or non-performance of Services hereunder. Golder will not direct, supervise or control the work of other consultants and contractors or their subcontractors. Insofar as job site safety is concerned, Golder is responsible only for the health and safety of its employees and subcontractors. Nothing herein shall be construed to relieve Client or any other consultants or contractors from their responsibilities for maintaining a safe job site. Golder shall not advise on, issue directions regarding, or assume control over safety conditions and programs for others at the job site.

15. Public Responsibility - Golder will endeavour to alert Client to any matter of which Golder becomes aware and believes requires Client's immediate attention to help protect public health and safety, or which Golder believes requires Client to notify others, or to otherwise conform with applicable codes, standards, regulations or ordinances. If Client decides to disregard Golder's recommendations in these respects, (i) Golder shall determine in its sole judgment if it has a duty to notify public officials, and (ii) Golder has the right to immediately terminate this Agreement upon written notice to the Client and without penalty.

16. Notification and Discovery of Hazardous Materials - Prior to commencing the Services and as part of Project Information defined in Article 10, Data and Information, Client shall furnish to Golder all documents and information known to Client that relate to past or existing conditions of the site and surrounding area, including the identity, location, quantity, nature or characteristics of any hazardous materials or suspected hazardous materials or subterranean utilities. Golder may rely on such information and documents. Client hereby warrants that, if it knows or has any reason to assume or suspect that hazardous materials may exist at the project site, it has so informed Golder. Client recognizes that hazardous materials or suspected hazardous materials may be discovered on the project site property or on surrounding properties.

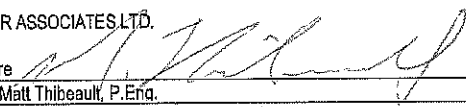
17. Termination - Either party may terminate this Agreement as a result of a material breach of the other party if the other party does not commence and continue to cure the breach within thirty (30) days of receipt of written notice of the breach from the non breaching party. In the event of termination, Golder shall be paid for Services performed to the termination notice date, reasonable termination expenses, and a portion of its anticipated profits not less than the percentage of the contract services performed as of the termination notice date. Golder may complete such analyses and records as are necessary to complete its files and may also complete a report on the Services performed to the date of notice of termination or suspension. The expenses of termination or suspension shall include all direct costs of Golder in completing such analyses, records and reports.

18. Intellectual Property - To the extent that the Services involve Golder providing Client with the right to use or access proprietary Golder software, programs, information management solutions, hosting services, technology, information or data ("Golder Products"), Golder grants Client during the term of the project a non-exclusive, non-transferable, non-assignable license to use the Golder Products for Client's internal purposes, solely in connection with the Services. Except for this limited license, Golder expressly reserves all other rights in and to the Golder Products. To the extent that the Services involve Client providing Golder with the right to use or access proprietary Client software, programs, technology, information or data ("Client Product"), Client grants Golder a perpetual, non-exclusive, non-transferable, non-assignable, royalty free world-wide license to use and access the Client Product as necessary to provide Client with Services. Golder shall own all Intellectual Property (as hereinafter defined) associated with the Services and the Golder Products together with any modifications, updates or enhancements to said Intellectual Property and grants no right or license to such

21. Authorization to Proceed - By signing below, Client hereby authorizes Golder to proceed with the Services as outlined in the proposal (referenced above) and in accordance with this Agreement, which includes terms relating to payment, limitation of liability, insurance and indemnity, among many other important provisions. Client also represents that any "purchase order" type document which Client may issue subsequent to executing this Agreement, shall be for administrative or accounting convenience only, and that any terms or conditions attached thereto shall not apply, and that all services shall be solely governed by the presently executed agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed, as of the date and year first set forth above.

GOLDER ASSOCIATES LTD.

Signature: 
 Name: Matt Thibeault, P.Eng.
 Title: Associate/ Senior Geotechnical Engineer

Intellectual Property to Client except as expressly provided in this Agreement. Client conveys to Golder any interest in any such Intellectual Property rights that, notwithstanding the foregoing, would otherwise be deemed by law to vest in Client. "Intellectual Property" includes patents, patent applications, trademarks, trademark applications, copyrights, moral rights or other rights of authorship and applications to protect or register the same, trade secrets, industrial rights, know-how, privacy rights and any other similar proprietary rights under the laws of any jurisdiction in the world. Golder may use and publish the Client's name and give a general description of the Services rendered by Golder for the purpose of informing other clients and potential clients of Golder's experience and qualifications.

19. Electronic Information - Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration, and incompatibility and therefore Client cannot rely upon the electronic media versions of the Documents. In the event of any discrepancy, Golder's hardcopy shall prevail.

20. Miscellaneous

a) This Agreement supersedes all other agreements, oral or written, and contains the entire agreement of the parties. No cancellation, modification, amendment, deletion, addition, waiver or other change in this Agreement shall have effect unless specifically set forth in writing signed by the party to be bound thereby. Titles in this Agreement are for convenience only.

b) This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns provided that it may not be assigned by either party without consent of the other. It is expressly intended and agreed that no third party beneficiaries are created by this Agreement, and that the rights and remedies provided herein shall inure only to the benefit of the parties to this Agreement.

c) Client acknowledges and agrees that Golder can retain subconsultants, who may be affiliated with Golder, to provide Services for the benefit of Golder. Golder will be responsible to Client for the Services and work done by all of its subconsultants and subcontractors, collectively to the maximum amount stated in Article 7 Limitation of Liability. Client agrees that it will only assert claims against and seek to recover losses, damages or other liabilities from Golder and not Golder's affiliated companies. To the maximum extent allowed by law, Client acknowledges and agrees it will not have any legal recourse, and waives any expense, loss, claim, demand, or cause of action, against Golder's affiliated companies, and their employees, agents, officers and directors.

d) No waiver of any right or remedy in respect of any occurrence on one occasion shall be deemed a waiver of such right or remedy in respect of such occurrence on any other occasion.

e) All representations and obligations (including without limitation the obligation of Client to indemnify Golder in Article 6 and the Limitation of Liability in Article 7 shall survive indefinitely the termination of the Agreement. Client acknowledges that it may not use Golder's name or any reference to the Services in any press release or public document without the express, written consent of Golder.

f) Any provision, to the extent found to be unlawful or unenforceable, shall be stricken without affecting any other provision of the Agreement, so that the Agreement will be deemed to be a valid and binding agreement enforceable in accordance with its terms.

g) All questions concerning the validity and operation of this Agreement and the performance of the obligations imposed upon the parties hereunder shall be governed by the laws of British Columbia unless the law of another jurisdiction must apply for this Agreement to be enforceable.

h) All notices required or permitted to be given hereunder, shall be deemed to be properly given if delivered in writing via facsimile machine, e-mail, regular mail, hand delivery or express courier addressed to Client or Golder, as the case may be, at the addressee set forth below in regard to the Client, and as listed on the Proposal in regard to Golder, with postage thereon fully prepaid if sent by mail or express courier.

City of Merritt _____

Signature _____
 Name: Mr. Shawn Boven
 Title: _____

Address Invoices to:
 2185 Voght Street
 Merritt, BC
 V1K 1B8



**SCHEDULE OF FEES - BC
INTERIOR OFFICES**
Effective January 1, 2010

**CONSULTANTS/ENGINEERS/SCIENTISTS/
PROJECT MANAGERS/ REVIEWERS***

| | | |
|--------------------------------|---------|---------|
| Principal/Specialist | Level 8 | \$225/h |
| Principal/Associate/Senior III | Level 7 | \$185/h |
| Associate/Senior II | Level 6 | \$165/h |
| Associate/Senior I | Level 5 | \$145/h |
| Intermediate II | Level 4 | \$130/h |
| Intermediate I | Level 3 | \$108/h |
| Junior II | Level 2 | \$98/h |
| Junior I | Level 1 | \$88/h |

CIVIL ENGINEERING DESIGN TECHNICIAN

| | |
|--------------|---------|
| Senior | \$150/h |
| Intermediate | \$125/h |
| Junior | \$105/h |

TECHNICIANS/TECHNOLOGISTS

| | | |
|--------------|---------|---------|
| Specialist | Level E | \$120/h |
| Senior | Level D | \$105/h |
| Intermediate | Level C | \$93/h |
| Junior II | Level B | \$83/h |
| Junior I | Level A | \$62/h |

CAD DRAFTING SUPPORT

| | |
|--------------|---------|
| Senior | \$105/h |
| Intermediate | \$87/h |
| Junior | \$67/h |

ADMINISTRATIVE SUPPORT

| | |
|--------------|--------|
| Senior | \$67/h |
| Intermediate | \$57/h |
| Junior | \$47/h |

DISBURSEMENTS

Our standard per diem meal rate for out of town work is: breakfast - \$12.00, lunch - \$15.00 and dinner - \$30.00. A mutually agreed per diem will be used for sites where the cost of meals is significantly greater. If requested, out of town meal expenses will be submitted at receipt cost.

A 6% charge will be added to the total fees to cover all incidental office disbursements, including production of colour and b/w working documents, the production of 3 sets of drawings/documents, as well as associated communication charges (excluding satellite phones). Reproduction of additional copies and drawings/documents will be at cost plus 10% plus the required time charges.

A 10% carrying charge will be added to all other disbursements including drilling or excavation services and use of external laboratory services. If agreed, invoices for drilling, excavation services and use of external laboratory services can be reviewed by Golder and submitted for payment directly by the client, in which case the 10% carrying charge will be waived.

* For senior specialist services, including but not limited to litigation support, expert witness, and/or senior level consultation, and priority emergency level services, higher rates may apply

The above rates are subject to revision.

Our invoices are payable upon presentation. Amounts outstanding after 30 days are subject to a finance charge of 1.5% per month (18% per annum). If payment remains past due 60 days from the date of the invoice, then Golder Associates Ltd. shall have the right to suspend all work, without prejudice, and all reasonable suspension costs shall be paid by the Client.

Special Notes:

1. The rates and charges listed above exclude applicable G.S.T. The 5% charge will appear as a separate line item on each invoice.
2. G.S.T. Registration No. R121431316
3. Please note that the HST will take effect in Ontario and BC starting July 1, 2010.

Carole

From: Shawn Boven
Sent: Wednesday, March 03, 2010 4:13 PM
To: Sean O'Flaherty; Carole
Cc: Marlie Worrin
Subject: FW: ArcMap matrix

Thanks for looking in that Sean and providing more information. Carole can you please distribute to Mayor and Council as there were questions arising out of the budget meeting. Or perhaps the information can be included in the next agenda package.

Thanks,

Shawn

From: Sean O'Flaherty
Sent: March-03-10 3:52 PM
To: Shawn Boven
Subject: RE: ArcMap matrix



Hi Shawn,

Thanks for your question. I will attempt to answer here based on my 15 years of GIS experience and information provided by ESRI:

The proposal was for ArcGis Server, not ArcView nor ArcGis ArcEditor. ArcGis ArcEditor is the software we already have, is quite advanced and requires training and is expensive to deploy throughout an organization.

The matrix document that you had attached refers to the functionality of the ArcGIS Desktop products which includes ArcView, ArcEditor and ArcInfo license levels as well as a number of extensions. Typically the ArcGIS Desktop product is used by more advanced GIS users who need to create and manage the spatial features and associated attribute data. The desktop environment also provides advanced capabilities for analysis and visualization.

ESRI submitted an estimate to install ArcGIS Server which allows us to deploy a simple-to-use web mapping application to support a broader audience of

users. This allows us to serve out and share the GIS data that the "GIS" and "CAD" personnel (me and Dick and sometimes you) create and manage in the ArcGIS Desktop environment along with other related business information we can leverage such as the data stored in MAIS , in a safe and secure manner with other users within City Hall but expandable and potentially external to the public. The web mapping application can be configured to allow users to navigate the map, search for information, view attributes associated with features, add mark-up to a map, print a standard map template or report.

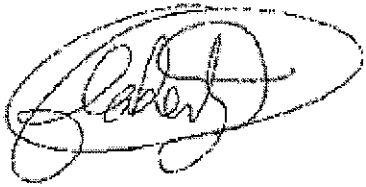
An example of a similar implementation in another jurisdiction that started internal but now serves the public is:

Central Okanagan Regional District

http://www.regionaldistrict.com/rdco_main/

Last fall we had a on-site demonstration using City of Merritt GIS data - a part of that presentation is also included as attached.

Regards,



Sean O'Flaherty
Development Services Officer
soflaherty@merritt.ca

City of Merritt Planning Department – Progress while preserving Merritt's best interests

City of Merritt - 2185 Voght Street, P.O. Box 189 Merritt, BC, Canada V1K 1B8
(250) 378-4224 - www.merritt.ca

From: Shawn Boven
Sent: Wednesday, March 03, 2010 10:58 AM
To: Sean O'Flaherty
Subject: FW: ArcMap matrix

Hi Sean,

Can you look at this email, the attachment, and what you have proposed, and offer any comments.

Thanks,

Shawn

From: Mike Goetz [<mailto:merc8@telus.net>]
Sent: March-02-10 9:49 PM

3/4/2010

To: Shawn Boven
Cc: Sanders, Shelley; Mayor; madia_hunter@shaw.ca; dave.baker@hotmail.com; bgk@telus.net; Alastair Murdoch
Subject: Fw: ArcMap matrix

Hi Shawn

Here is some info on the Arc View as regarding your question on the query ability on Arcview, you are correct that Arcview will not query, talking with a GIS Pro that I have known for 10 years and who is on the development of GIS over the years.

According to Devona the version of Arc Editor would serve this purpose and is quite inexpensive for the licensing, have a look.

Hope this helps

Mike G

From: Hay, Devona L FOR:EX
Sent: Monday, March 1, 2010 8:52 AM
To: Goetz, Mike G ISMC:EX
Subject: FW: ArcMap matrix

FYI

Devona Hay, RFT

GIS Analyst / TKA Genus Administrator

BCTS - Kamloops TSO

1265 Dalhousie Drive

Kamloops, BC V2C 5Z5

Telephone: (250) 371-6526

Fax: (250) 371-6565

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ArcGIS® Server 9.3.1 Functionality Matrix

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ArcGIS Server 9.3.1 Functionality Matrix

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ArcGIS Server 9.3.1 Functionality Matrix

Introduction

ArcGIS® Server allows you to share your geographic information system (GIS) resources across an enterprise and across the Web. GIS resources are the maps, globes, address locators, geodatabases, and tools that you want to share with others. You can host GIS resources on your ArcGIS Server system or GIS server and allow client applications, like Web mapping applications, to use and interact with the resources.

Sharing your GIS resources on a GIS server allows you to not only distribute data and convey information to a wider audience but also disseminate GIS functionality via services and applications to internal and external end users. Those users may not realize they are using GIS functionality.

ArcGIS Server is composed of a scalable line of editions based on functionality and levels based on capacity.

This document is a guide for determining the edition and capacity level of ArcGIS Server that best fits your organization.

Functionality Matrix

Selecting the Right ArcGIS Server Edition and Level

When selecting the appropriate ArcGIS Server edition and level for your organization, consider these two questions:

1. What functionality (features and capabilities) do you require?
2. What level of capacity (storage and number of simultaneous connections) do you want to support?

Functionality

ArcGIS Server functionality is provided via three editions: Basic, Standard, and Advanced. In the matrix below, functionality is grouped into categories. For more information about each category, see the Functionality Matrix Details section of this document.

| Functionality | Editions | | |
|-------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Geodatabase Management | ✓ | ✓ | ✓ |
| Geodatabase Replication | ✓ | ✓ | ✓ |
| Web Services | * | ✓ | ✓ |
| Web Map Publishing | | ✓ | ✓ |
| Web 3D Globe Publishing | | ✓ | ✓ |
| Web Mapping Application | | ✓ | ✓ |
| Web Editing Application | | ✓ | ✓ |
| Simple Geoprocessing | | ✓ | ✓ |
| Advanced Geoprocessing | | | ✓ |
| Mobile Application/SDK | | | ✓ |

* Geodata service functionality is included in all editions.

Additionally, you can supplement ArcGIS Server functionality by adding ArcGIS Server extensions.

| Extensions | Editions | | |
|-----------------------|----------|----------------------------|----------------------------|
| | Basic | Standard | Advanced |
| 3D | | | ✓ |
| Spatial | | | ✓ |
| Geostatistical | | | ✓ |
| Network | | Optional | ✓ |
| Data Interoperability | | Optional (Windows only) | Optional (Windows only) |
| Geoportal | | Optional | Optional |
| Image | | Optional (Windows only) | Optional (Windows only) |
| Job Tracking | | Optional (Windows only) | Optional (Windows only) |
| Schematics | | | Optional (Windows only) |

Note that some extensions are only available at specific editions of ArcGIS Server. For example, the Spatial extension is only available (and is included) with the Advanced edition. The Network extension is included with the Advanced edition but optionally available with the Standard edition. No extensions are available with the Basic edition.

For further details on the typical functions and capabilities included with each extension, refer to www.esri.com/software/arcgis/arcgisserver/extensions.html.

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Capacity The ArcGIS Server editions described in the previous section are available at two levels, scaled according to capacity: Workgroup and Enterprise.

| | Capacity Level | |
|--|----------------|------------|
| | Workgroup | Enterprise |
| Simultaneous connections to multiuser geodatabase | 10 | Unlimited |
| Multiuser geodatabase storage capacity | 4 GB | Unlimited |
| Maximum number of licensable cores | 4 cores | Unlimited |
| Distributed deployment of ArcGIS Server components | Not supported* | Supported |

* Workgroup level components can be installed on only one machine.

Selecting functionalities and the capacity level specifies the ArcGIS Server edition and level. For example, ArcGIS Server Standard Enterprise supports unlimited simultaneous connections, a large multiuser geodatabase, and a standard set of functions. For more examples, see the ArcGIS Server Example Scenarios section below.

Functionality Matrix Details

Geodatabase Management

ArcGIS Server allows you to manage your geodata in a variety of database management systems. Data can be stored in a central database and support the concurrent multiuser editing necessary for many data management workflows. With ArcGIS Server, you have the ability to create and load spatial data into geodatabases.

| Functionality | Editions | | |
|------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Geodatabase Management | ✓ | ✓ | ✓ |

What Is a Geodatabase?

The geodatabase is the common data storage and management framework for ArcGIS. It combines "geo" (spatial data) with "database" (data repository) to create a central data repository for spatial data storage and management. A geodatabase stores geometry, a spatial reference system, attributes, and behavioral rules for data. Various types of geographic datasets can be collected within a geodatabase, including feature classes, attribute tables, raster datasets, network datasets, topologies, and many others.

ArcGIS Server is designed to leverage multiuser geodatabases. Multiuser geodatabases leverage ArcSDE® technology, implemented on a relational database management system (RDBMS).

The Enterprise level supports the following RDBMS:

- IBM® DB2®
- Informix® Dynamic Server
- Microsoft® SQL Server®
- Oracle®
- PostgreSQL

The Workgroup level supports the following RDBMS:

- Microsoft SQL Server Express

For the most up-to-date information about supported databases, visit wikis.esri.com/wiki/display/ag93bsr/ArcGIS+9.3+System+Requirements.

Geodatabase Replication

Geodatabase replication enables GIS data to be shared across two or more geodatabases. Data changes can be made in each geodatabase, then synchronized.

Geodatabase replication

- Is built on top of the versioning environment
- Supports the full geodatabase data model, including topologies and geometric networks
- Can work in an asynchronous model (The replication is loosely coupled so that each replicated geodatabase can work independently and still synchronize changes with one another.)
- Does not require a uniform DBMS across replicas
- Works in a connected or disconnected environment
- Can utilize local geodatabase connections as well as geodata services (through ArcGIS Server) to access the geodatabase over the Internet

| | Editions | | |
|-------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Geodatabase Replication | ✓ | ✓ | ✓ |

Web Services

ArcGIS Server allows you to share your spatial data and functionality through the use of Web services. Web services make it easy to share the use of resources across client applications, including ArcGIS Desktop, ArcGIS Explorer, and custom Web mapping applications.

| | Editions | | |
|--------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Web Services | * | ✓ | ✓ |

* Geodata service functionality is included in all editions.

What Are Web Services?

Web services represent GIS resources that a server makes available to other computers on a network. This network can be a local one, such as your company's computer system, or it can be a broader network, such as the Internet. The computers on the network that access your service are called clients. When you use ArcGIS Server to publish a service, you are giving clients access to a GIS resource. In many cases, clients can do the same things with the service that they could if a copy of the resource were on their own computer.

Both ArcGIS Server Standard and Advanced editions support the following types of Web services:

- Geodata
- Geocode
- Geometry
- Geoprocessing
- Globe
- Image
- Keyhole Markup Language (KML)**
- Map
- Mobile (available in ArcGIS Server Advanced Enterprise only)
- Network Analyst (optional Network extension required for Standard edition)
- Web Coverage Service (WCS)**
- Web Feature Service (WFS)** and Transactional Web Feature Service (WFS-T)
- Web Map Service (WMS)**

** Supports the Open Geospatial Consortium, Inc. (OGC), standards.

***Web Map and Web
3D Globe Publishing***

ArcGIS Server allows you to publish 2D maps created in ArcMap™ and 3D globes created in ArcGlobe™ as services for use in Web, mobile, and desktop applications.

Publishing

- Publish any map from your ArcGIS platform, leveraging any spatial data in your organization.
- Use advanced Maplex® for ArcGIS labeling.
- Serve imagery, such as digital aerial photography, satellite image, and other remotely sensed data.
- Serve cached and dynamic services for 2D and 3D data.

Rendering

- Use dynamic 2D map rendering.
- Use dynamic 3D globe rendering.

Mashup

- Combine multiple map services in a Web application.

| | Editions | | |
|-------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Web Map Publishing | | ✓ | ✓ |
| Web 3D Globe Publishing | | ✓ | ✓ |

Web Mapping Application

Through ArcGIS Server Manager, you can configure Web mapping applications and tailor them to the needs of the people who will use them. ArcGIS Server Manager lets you choose the data you want to show—select map elements such as north arrows and scale bars, select tools for working with your application, and configure the map layout. Configuring the Web mapping application requires no programming experience.

Alternatively, application developers can build custom Web mapping applications using ArcGIS application programming interfaces (APIs), such as the ArcGIS API for JavaScript™, ArcGIS API for Flex™, and the ArcGIS API for Silverlight™. ArcGIS Server also provides a Web Application Developer Framework (ADF™) for .NET and Java™.

| | Editions | | |
|-------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Web Mapping Application | | ✓ | ✓ |

What Is Manager?

Manager is the application you use to work with your GIS server. From Manager, you can add and remove services, tune and secure your services, and organize services in folders. Manager comes with an easy-to-use wizard for creating Web mapping applications. It also includes mechanisms for publishing maps and KML network links on your server. Finally, Manager allows you to configure the machines and directories in your server system and troubleshoot the server using its logs.

The Web mapping application includes the following features:

- **Pan and Zoom**
 - Fixed zoom in, zoom out, and pan
 - Interactive zoom in, zoom out, and pan
- **Map Interaction**
 - Identifying features on a map
 - Previous extent
 - Feature-based hyperlink to other documents
 - Measuring distances
- **Map Components**
 - Magnification window
 - Overview map
 - Interactive north arrow
- **Tasks**
 - Find place
 - Find address
 - Query attribute
 - Search attribute
 - Editing
 - Print
 - Geoprocessing

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Web Editing Application

The Web mapping application (described above) can be configured as a Web editing application so that end users can make spatial and attribute edits and updates to the geodatabase.

In addition to the Web mapping application features, the Web editing application includes the following features:

- Feature editing and feature creation
 - Create, update, and delete points, lines, and polygons and their associated attributes.
 - Copy and paste.
 - Move, merge, and split.
 - Specify exact x,y locations.
 - Point and click on-screen digitizing of point, line, and polygon features.
 - Isolate editing in separate versions.
 - Undo/Redo operations.
- Snapping
 - Snap by layer (vertex, edge, endpoint).
 - Set snapping and feature selection tolerances.
 - Get client-side snapping feedback.
- Attribute editing
 - Modify and create attribute values.
 - Maintain attribute values through defined rules (domain).

Administrators can limit the editing functionality exposed to end users.

| | Editions | | |
|-------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Web Editing Application | | ✓ | ✓ |

Simple and Advanced Geoprocessing

ArcGIS Server provides an extensive array of geoprocessing functionality. Geoprocessing can be divided into two types: simple geoprocessing and advanced geoprocessing.

| | Editions | | |
|------------------------|----------|----------|----------|
| | Basic | Standard | Advanced |
| Simple Geoprocessing | | ✓ | ✓ |
| Advanced Geoprocessing | | | ✓ |

What Is Geoprocessing?

Geoprocessing takes an input dataset, performs an operation on that dataset, and returns the result of the operation as an output dataset.

With ArcGIS Server, you can publish geoprocessing services that allow you to submit jobs to the server and get back a set of results. Building a geoprocessing service requires that you first create a model using the ModelBuilder™ feature in ArcGIS Desktop. A model is a logical sequence of geoprocessing tools and scripts that help you automate a GIS operation. The server accesses the model and does the work, freeing your computer's resources and eliminating the problem of sharing copies of the model.

■ Simple geoprocessing

This supports 194 tools, comparable to the ArcGIS Desktop ArcView® software-level geoprocessing toolbox.

■ Advanced geoprocessing

This supports an additional 90 tools, comparable to the ArcGIS Desktop ArcInfo® software-level geoprocessing toolbox.

See appendix A of the *ArcGIS Geoprocessing Commands Quick Reference Guide* to see the Tool Licensing matrix at webhelp.esri.com/arcgisdesktop/9.3/pdf/Geoprocessing_Quick_Guide.pdf.

Mobile Application

ArcGIS Server Manager provides an out-of-the-box, configurable mobile application. The application is designed for use on Windows Mobile® devices and is ideal in workforce automation projects. Use ArcGIS Server Manager to create field projects that can be downloaded directly to the device. The application leverages the Global Positioning System (GPS) through National Marine Electronics Association (NMEA) protocol, providing location awareness for map navigation and GIS data collection workflows.

Out-of-the-box tasks include

■ View Map

- Feature, annotation, and raster display
- Stored in mobile service cache

■ Collect Features

- Dictionary of feature types is provided.
- Create new points, lines, and polygons.
- Fill out attribute form.

■ Search Features

- Dictionary of feature types is provided.
- Build spatial and attribute query.
- Add search results to list.

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- View Work List
 - List of features is displayed.
 - Update attributes from list.
 - Delete features from list.

- Synchronize
 - View edits in cache.
 - View sync results.
 - Get data from server.
 - Post edits to server.

- View Status
 - Battery status
 - Network status
 - GPS status

The ArcGIS Mobile Software Developer Kit (SDK) provides you with a set of .NET tools to build a full range of custom, small-footprint mobile GIS applications that deliver mobile mapping and GIS functionality.

The software development kit includes

- Map Control
 - Display mobile service cache.
 - Include custom map layers.

- Mobile Service
 - Communication component with GIS server
 - Ability to get and post data with mobile Web service
 - Cache for features, annotation, and rasters

- Map Actions
 - Zoom In, Zoom Out, Pan, and Sketch tools
 - Used to interact with map control

- GPS Integration
 - GPS connection (file or serial)
 - GPS display for map control
 - NMEA protocol support

■ Editing Support

- Edit directly to local cache.
- Edit feature layers only in cache.
- ActiveX Data Objects (ADO) .NET to create, edit, and delete features.
- Sync edits using mobile service.

| | Editions | | |
|------------------------|----------|----------|------------------|
| | Basic | Standard | Advanced |
| Mobile Application/SDK | | | ✓ (.NET only) |

Supported Platforms

ArcGIS Server for the Microsoft .NET Framework and the Java Platform supports the following operating systems:

| Operating System | ArcGIS Server for the Microsoft .NET Framework | ArcGIS Server for the Java Platform |
|---|--|-------------------------------------|
| Microsoft Windows® (XP, Vista, Windows Server®) | ✓ | ✓ |
| Red Hat® Enterprise Linux® | | ✓ |
| SUSE® Linux Enterprise Server | | ✓ |
| Sun™ Solaris™ | | ✓ |

For the most up-to-date information about supported platforms, visit wikis.esri.com/wiki/display/ag93bsr/ArcGIS+9.3+System+Requirements.

**ArcGIS Server
Example Scenarios**

*ArcGIS Server
Advanced Enterprise*

- Large city government (population 250,000+)
- GIS department: Seven employees
 - Supports four other departments (police, planning, engineering, and public works) with one GIS staff member each
 - ◆ Supports police with advanced crime analysis models and mapping (1 desktop user and 5 Web users)
 - ◆ Supports planning with demographic analysis and modeling (1 desktop user and 3 Web users)
 - ◆ Supports engineering with imagery and 3D visualization (1 desktop user, 5 ArcGIS Explorer users, and 10 Web users)
 - ◆ Supports public works with mobile data collection and mapping (1 desktop user and 40 field users)

- Provides multiple internal applications and services that require geocoding and mapping to non-GIS staff, including data updates (50 Web users)
- Provides multiple external Web mapping applications for public consumption (potentially thousands of concurrent Web users)
- Maintains extensive spatial databases and services
 - ◆ Land-use records for planning department (over 10 GB of vector data)
 - ◆ Asset inventories tied to city's enterprise resource planning (ERP) system
 - ◆ Public works project mapping tied to a work order management system
 - ◆ High-resolution aerial photography updated twice every five years (roughly 700 GB of imagery)
- Directive from mayor's office for better government transparency, including interactive maps of city projects and planning efforts for public access
- IT department maintaining a distributed system of servers and networks that supports all departments
- Deployment includes
 - A clustered geodatabase on top of a commercial database system for simultaneous editing
 - An ArcGIS Server deployment in the organization's DMZ for external consumption by general public
 - A separate ArcGIS Server node for mobile access and editing from the field
 - An internal ArcGIS Server deployment for basic mapping and querying capabilities
- Requires ArcGIS Server Advanced Enterprise because
 - Over 4 GB of data requiring simultaneous editing on the enterprise geodatabase
 - Overall, more than 10 simultaneous users connecting to the enterprise geodatabase (4 desktop users plus a number of map service connections that will exceed 20 given the potential load of Web users)
 - A deployment of ArcGIS Server involving more than one physical machine and four cores
 - Mobile capabilities required

***ArcGIS Server
Standard Workgroup***

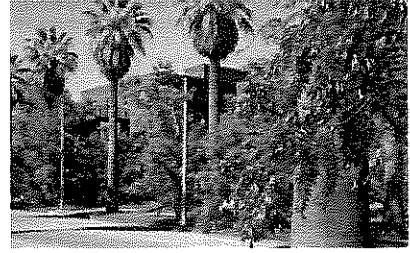
- Small land-use planning and engineering consultant
- Two planners, three GIS analysts, and four engineers requiring access to project GIS database at any given time
 - 3 GB of vector data stored in SQL Server express and configured for concurrent edits from three desktop seats
 - Over 50 GB of imagery stored in TIFF files
 - 10 GB of data stored in file geodatabases
- Uses customer datasets and ArcGISSM Online basemaps to augment applications and mapping efforts
- Provides several internal Web mapping applications to manage projects; Web applications configured to support up to 40 simultaneous users over the intranet
- Uses Data Interoperability, Network, and Image extensions
- Typical ArcGIS Server Standard Workgroup deployment because
 - Entire deployment can be sustained on a single four-core machine.
 - The number of concurrent users of the geodatabase does not exceed 10.
 - ◆ GIS analysts: Three connections from desktop seats
 - ◆ Planners, engineers, and other users: Five connections to configure map services that will support Web browser-based applications
 - Data stored in a multiuser geodatabase (SQL Server) does not exceed 4 GB.

***ArcGIS Server
Standard Enterprise***

- Fortune 500 company
- GIS staff: Two developers, one GIS analyst
- Provides several GIS services for internal and external use
 - Routing, mapping, and geocoding services for Web users; potentially thousands of concurrent users
 - Mapping and querying capabilities for internal users (100 Web users)
 - All services integrated with the corporate e-commerce system through the company's enterprise service bus

- Configured a high-availability deployment of ArcGIS Server
 - Development environment: Two ESRI® Developer Network (EDNSM) licenses for development and testing
 - Staging environment: Distributed ArcGIS Server Standard Enterprise deployment including a clustered enterprise geodatabase and a GIS server farm of four physical 16-core blade servers and four redundant Web servers; ArcGIS Server licensed for staging environment
 - Production environment: Similar to staging environment; ArcGIS Server Standard Enterprise licensed for commercial use
- Requires ArcGIS Server Standard Enterprise because
 - Deployment distributed across multiple machines
 - Required functionality provided with Standard edition: mapping, geocoding, and routing (routing requires an additional extension)
 - Note: To support full enterprise deployment, organization makes use of development, staging, and commercial licenses of ArcGIS Server

For more information about ArcGIS Server, visit www.esri.com/arcgisserver or contact your local ESRI representative.



About ESRI

Since 1969, ESRI has been helping organizations map and model our world. ESRI's GIS software tools and methodologies enable these organizations to effectively analyze and manage their geographic information and make better decisions. They are supported by our experienced and knowledgeable staff and extensive network of business partners and international distributors.

A full-service GIS company, ESRI supports the implementation of GIS technology on desktops, servers, online services, and mobile devices. These GIS solutions are flexible, customizable, and easy to use.

Our Focus

ESRI software is used by hundreds of thousands of organizations that apply GIS to solve problems and make our world a better place to live. We pay close attention to our users to ensure they have the best tools possible to accomplish their missions. A comprehensive suite of training options offered worldwide helps our users fully leverage their GIS applications.

ESRI is a socially conscious business, actively supporting organizations involved in education, conservation, sustainable development, and humanitarian affairs.

Contact ESRI

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info@esri.com

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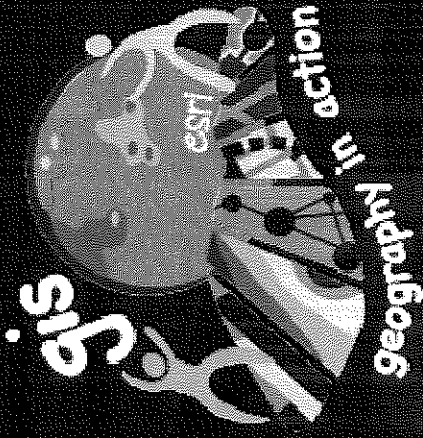
Offices worldwide

www.esri.com/locations



ESRI

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Redlands, California
92373-8100 USA



City of Merritt

“GIS – An Enabling Technology”



Agenda:

- 1. City of Merritt Today**
- 2. Current Need**
- 3. ESRI Overview**
- 4. Technology Demo**
- 5. Proposed Solution**
- 6. Q & A / Discussion**
- 7. Next Steps**

City of Merritt Today

- **Asset Inventory**
 - Meet PSAB requirements
 - Asset Inventory in GIS
- **Investment in Infrastructure**
 - Sustainability
 - Support future growth
- **Cadastral Compilation**
 - Improve quality and accuracy of geospatial data
- **Business Systems & Partners**
 - MAIS Finance system
 - TNRD Regional Services

Current Need

1. Geospatial data management – Create a centralized repository of geospatial data which can be dynamically accessible to all users and applications.
2. Sharing Geospatial Information – Provide software tools and applications empowering a large number of potentially varied users to benefit from an integrated GIS.

What is the underlying business need?

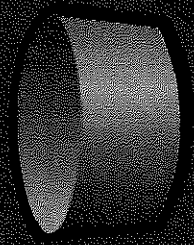
- Better information for decision making to enhance service delivery, improve asset management and support future growth

ESRI Canada

- Providing GIS solutions since 1984
- 16 offices across Canada, 3 in BC
- 300+ employees
- 8000+ customers
- 140+ business partners
- Provincial & Federal Government standard
- Municipal market leader
- ESRI Technology Training
- Professional Services
- Technical Support
- Regional Users Conferences
- Industry Associations



GIS Provides 3 Essential Capabilities



Data Management

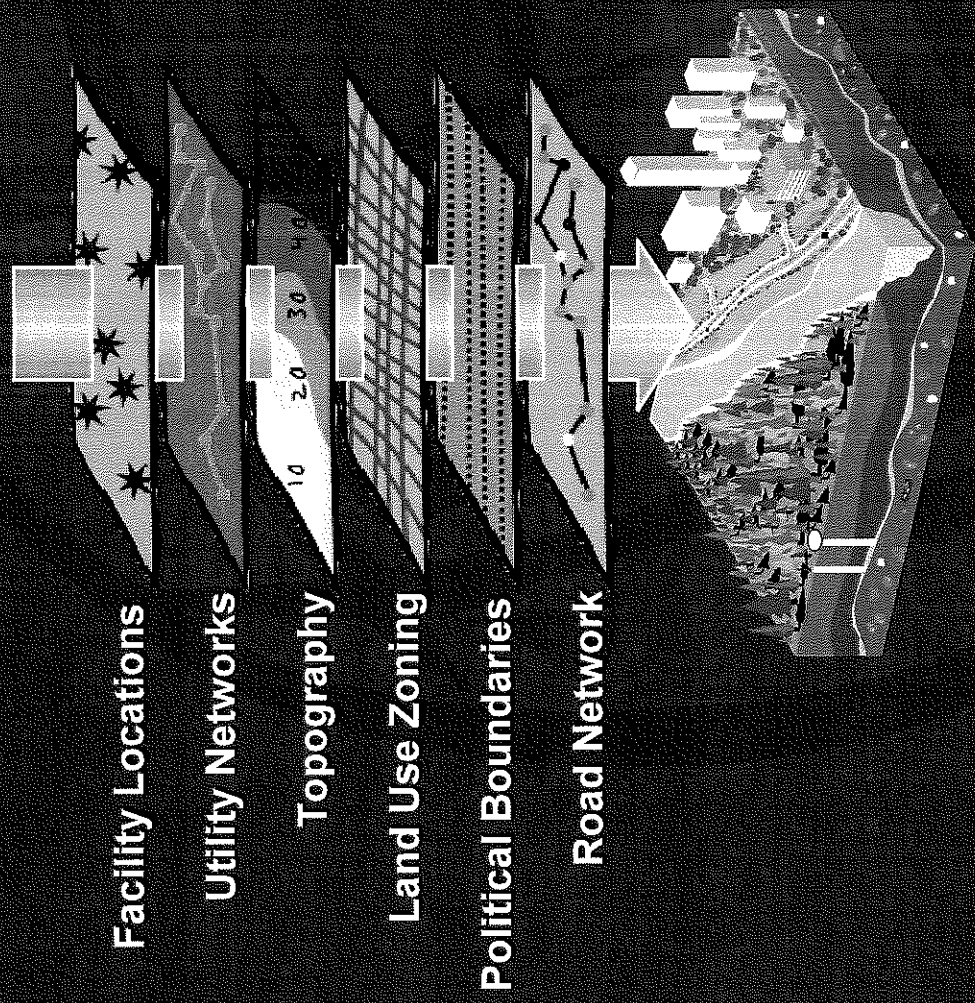


Data Visualization



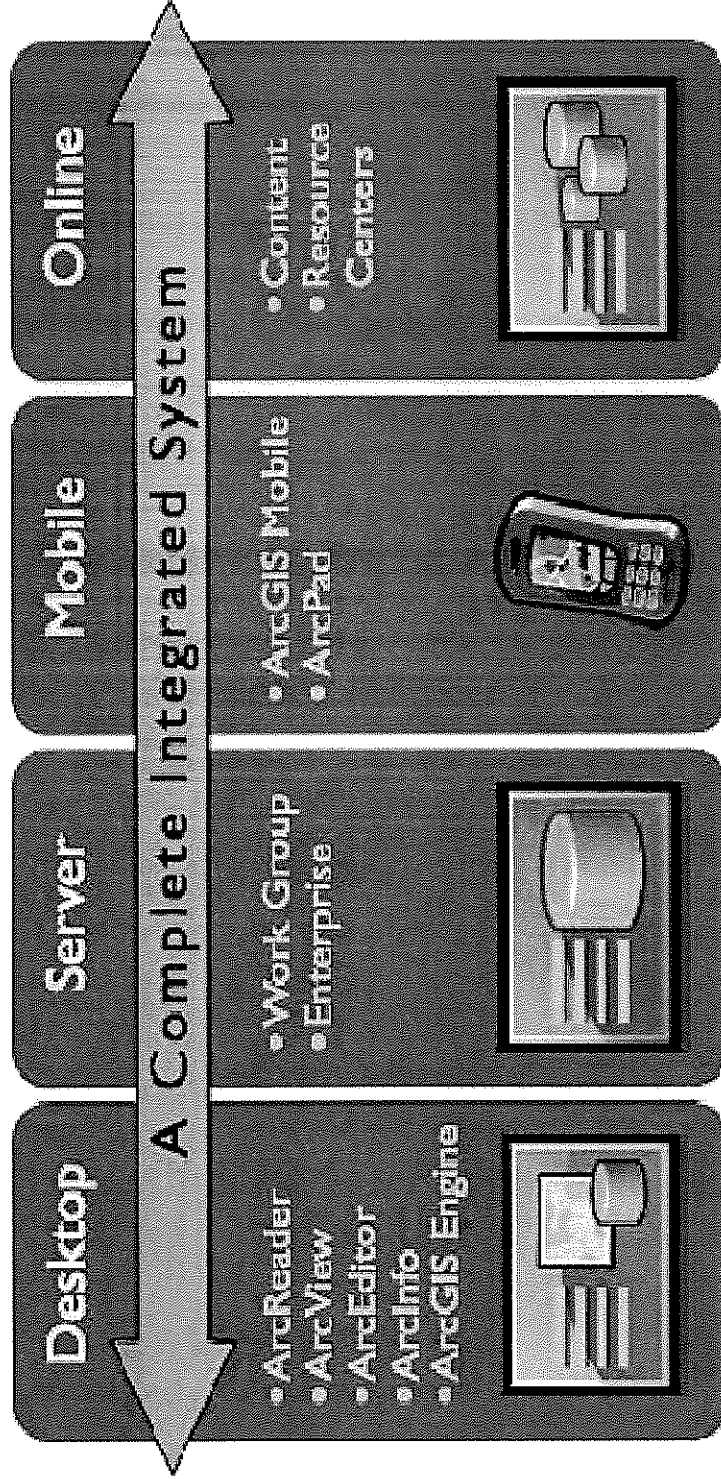
Data Analysis

Build information and tools once and use them many times...

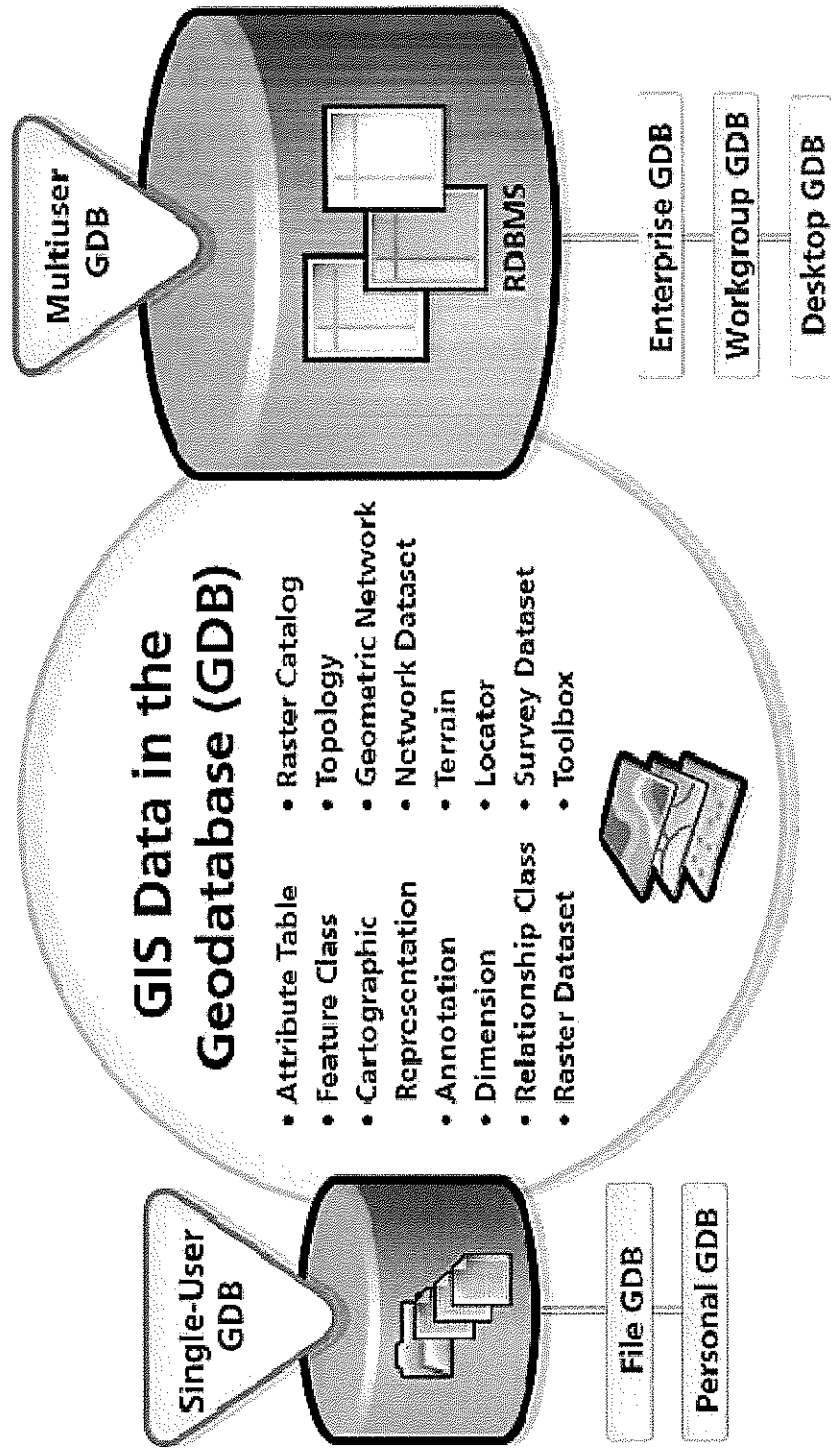


ArcGIS Software Platform

ArcGIS

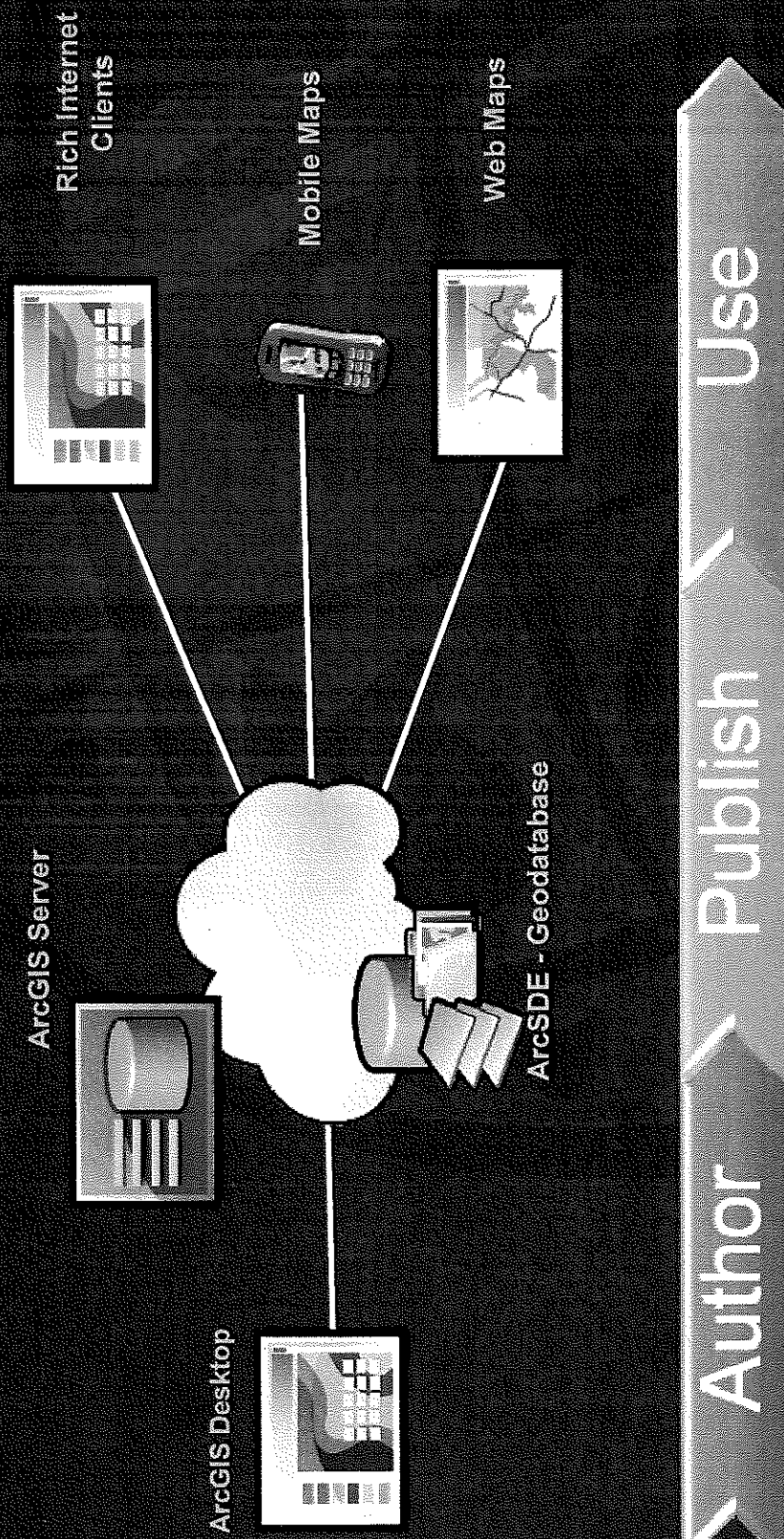


Managing Geospatial Data



ArcGIS 9.3.1

Deploying Web GIS



9.3.1 Provides on a framework and methodology for publishing great web GIS

ESRI Technology Demo

- ArcGIS Desktop
 - Managing Geospatial Data
 - Geoprocessing Framework
 - Authoring Content for the Web
- ArcGIS Server
 - Publishing resources
 - Server Manager
 - City of Merritt OTB Web Mapping
 - [Sample Public Facing Web Mapping RDCK](#)

City of Merritt - Web Mapping Demo (1)

The screenshot displays a web mapping application for the City of Merritt. The browser window shows the URL 'http://merritt.com'. The page title is 'The City of Merritt Web Mapping System'. The interface includes a navigation toolbar with zoom and pan controls. A legend in the bottom-left corner lists the following layers:

- City Boundary
- Road
- A/R
- Hydrants
- NamePoly
- NameLine
- NOT Controlled Intersection
- PARCELS_1994
- CCP_Factors
- TIRD 540 Zoning
- Slope_5m
- Zoning

The map area shows a detailed view of the city boundary, with various land use features and a river. A scale bar in the bottom-right corner indicates a scale of 0.2, 0.1, 0, and 0.2 Miles. The browser window also shows several open tabs and a taskbar at the bottom.

City of Merritt - Web Mapping Demo (2)

The City of Merritt Web Mapping System

Legend:

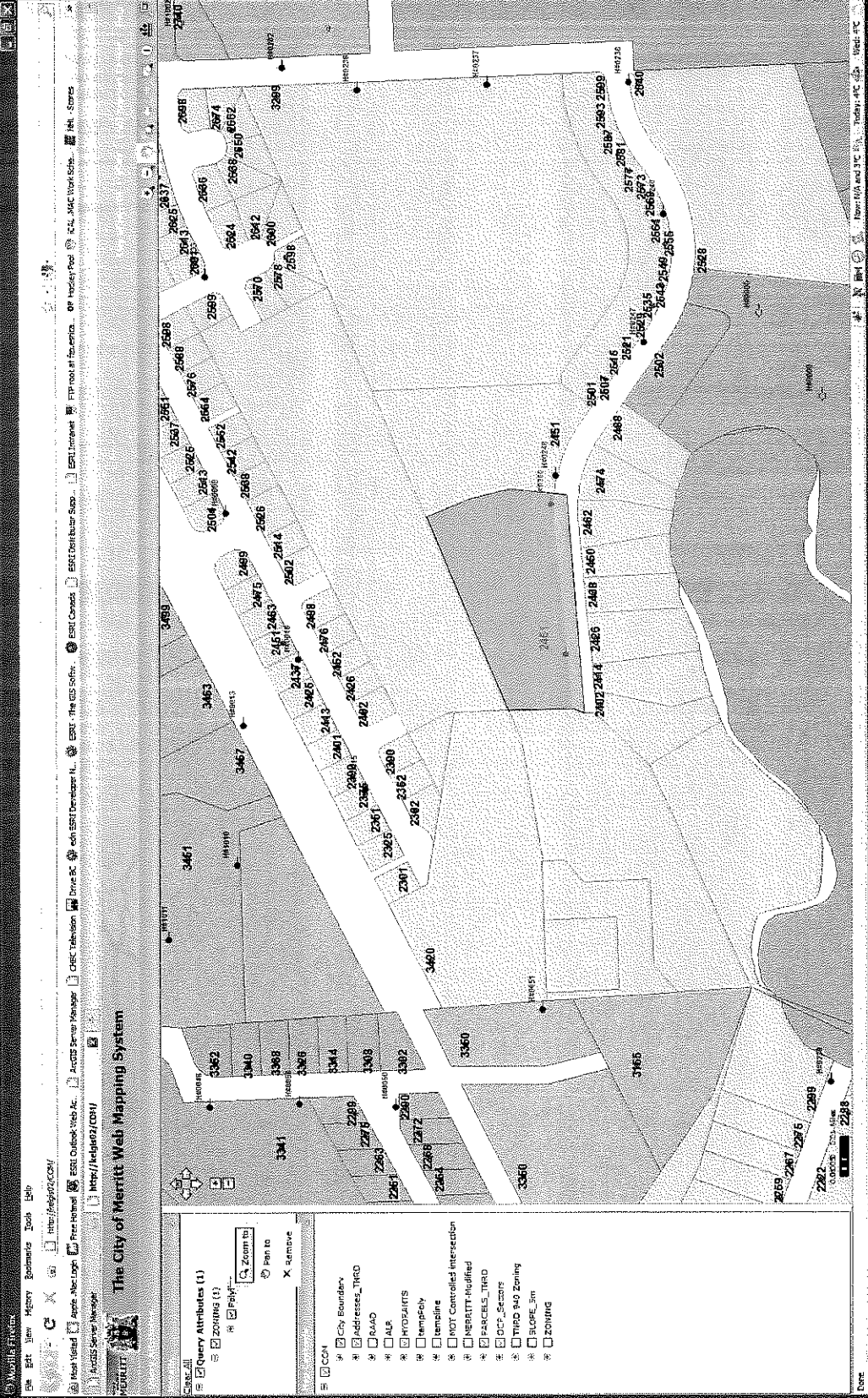
- City Boundary
- ROAD
- WATERWAYS
- SLOPE_5m
- ZONING
- PRCELS_THRD
- CCS_Sectors
- TRSD 540 Zoning
- SLOPE_5m
- ZONING
- NOT Controlled Intersection
- MERRITT-Modified
- TEMP_Poly
- LImeline
- ALK
- H2OWAYS

Query Zoning: 1008

| |
|------|
| 1008 |
| 1009 |
| 1043 |
| 1065 |
| 1074 |
| 124E |
| 15 |
| 17 |
| 1E |
| 22 |
| 26 |
| 28 |
| 29 |
| 20 |
| 2F |
| 2P |
| 31 |

Scale: 0.2 Miles

City of Merritt - Web Mapping Demo (3)



Proposed Solution – Internal Web Mapping & Geospatial Data Management

- 1. ArcGIS Server Standard Workgroup**
 - Platform and tools to deploy an out of the box web mapping application for internal users
 - Core geodatabase management tools and technology for data storage, management and distribution in a multi-user environment
- 2. Implementation Support & Training**
 - Introduction to ArcGIS Server Training Course
 - ArcGIS Server Implementation
 - Geodatabase Implementation (Phase II)

City of Merritt Future GIS Capabilities

Integration / Data Sharing

- MAIS data linking
- ICIS Data Uploads
- TNRD Geodatabase Replication

Web Mapping Applications

- Internal – common operations picture
- Public Facing Web Mapping – Facility Finder, Property Report, Cemetery
- Mobile GIS

Asset Management

- Service Requests (e.g., bylaw enforcement, public works, garbage)
- Preventative maintenance activities
- Work order management
- Capital Planning

Planning & Development

- 3D Visualization
- Economic Development
- Demographics
- BC Climate Action Accord – Carbon Footprint

Summary

- ESRI is the world leader in enterprise GIS technology
 - Provides the deepest and widest set of solutions to meet the City's near term goals with a foundation that will grow
- ESRI Canada has strong local presence to support the City of Merritt
 - Sales, Professional Services and Training support in Kelowna and Vancouver
- ESRI Canada geocentric solutions to leverage the geospatial foundation
 - Cityworks Work Order Management & Permitting

John

From: hpo@hpo.bc.ca
Sent: Wednesday, March 03, 2010 6:24 PM
To: John
Subject: Homeowner Protection Act Responsibilities Transferred



Homeowner Protection Office

Homeowner Protection Act Responsibilities Transferred

As part of government's review of Crown corporations, the Province will transfer a number of the key responsibilities under the *Homeowner Protection Act* effective April 1, 2010.

Please click on this link to the [information bulletin](#) on the HPO website for further details.

INFORMATION BULLETIN

2010HSD0024-000212
March 3, 2010

Ministry of Housing and Social Development

HOMEOWNER PROTECTION ACT RESPONSIBILITIES TRANSFERRED

VICTORIA – As part of government’s review of Crown corporations, the Province will transfer a number of the key responsibilities under the Homeowner Protection Act effective April 1, 2010.

The transfer of responsibilities includes:

- Transferring the residential builder and building envelope renovator licensing, owner builder authorization and the research and education responsibilities to BC Housing.
- Transferring the administration of the Reconstruction Program to the Ministry of Finance. HPO stopped accepting new applications for this program in July 2009.

As of June 30, 2010 the PST Relief Grant for owners of homes with completed building envelope repairs will be terminated in conjunction with the introduction of the Harmonized Sales Tax (HST). Applications for the grant will be accepted at the current HPO address until 4 p.m. on June 30, 2010.

Requirements for licensing, owner builder authorizations and home warranty insurance under the Homeowner Protection Act will remain unchanged.

The HPO website will continue to provide online licensing, new home registration, owner builder authorization, Building Smart seminar registration, and research and education information for the residential construction industry and consumers.

For the latest information about the transfer of the Homeowner Protection Act responsibilities, visit www.hpo.bc.ca.

-30-

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For more information on government services or to subscribe to the Province’s news feeds using RSS, visit the Province’s website at www.gov.bc.ca.