



THE CITY OF WINNIPEG

REQUEST FOR PROPOSAL

RFP NO. 809-2010

**DESIGN, DEVELOP, IMPLEMENT, AND OPERATE A CUSTOMER SELF SERVICE
WEB SITE FOR WATER BILLING**

TABLE OF CONTENTS

PART A - PROPOSAL SUBMISSION

Form A: Proposal	1
Form B: Prices	3
Form N – Bidder Responses	4

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Enquiries	1
B4. Confidentiality	1
B5. Addenda	1
B6. Substitutes	2
B7. Proposal Submission	3
B8. Proposal	3
B9. Prices	4
B10. Qualification	4
B11. Form N: Bidder Responses	5
B12. Opening of Proposals and Release of Information	5
B13. Irrevocable Offer	5
B14. Withdrawal of Offers	6
B15. Interviews	6
B16. Negotiations	6
B17. Evaluation of Proposals	6
B18. Award of Contract	7

PART C - GENERAL CONDITIONS

C0. General Conditions	1
C1. Definitions	1
C2. Interpretation	3
C3. Declarations	3
C4. Execution of Contract	4
C5. Authority of Contract Administrator	4
C6. Responsibilities of Contractor	5
C7. Changes in Work	7
C8. Right of Entry	9
C9. Risk and Responsibility	10
C10. Inspection	10
C11. Measurement and Payment	11
C12. Warranty	12
C13. Governing Law	13
C14. Assignment	13
C15. Force Majeure	13
C16. Indemnity	14
C17. Events of Default	14
C18. City's Rights and Remedies	15
C19. Contractor's Right to Appeal	16
C20. Arbitration	16
C21. Notices	17

PART D - SUPPLEMENTAL CONDITIONS

General	
D1. General Conditions	1
D2. Scope of Work	1
D3. Contract Administrator	1
D4. Contractor's Supervisor	1
D5. Confidentiality and Ownership of Information	2

D6. Notices	2
Submissions	
D7. Authority to Carry on Business	2
D8. Insurance	2
D9. Subcontractor List	3
Schedule of Work	
D10. Commencement	3
Control of Work	
D11. Job Meetings	3
D12. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	3
D13. Safety	3
Measurement and Payment	
D14. Invoices	4
D15. Payment	4
D16. Payment Schedule	4
Warranty	
D17. Warranty	5
PART E - SPECIFICATIONS	
General	
E1. Applicable Specifications	1
E2. Web Site Design	1
E3. WEB Development (Includes development, testing, training, implementation and documentation)	2
E4. Website Operation	2
APPENDIX A: FILE LAYOUT DETAIL BILL INFORMATION	
DOC1 Generate Input – Sorted CC&B Bill Print Extract	
Sortkey – All Records Types	4
0010 – File Header Record	5
0100 – Start of Bill Record	7
0300 – Current Charge Record	9
0600 – Payment Record	10
0700 – Deposit Record	11
0900- Start of Premise Record	12
1100 – Start of Service Agreement Record	13
1300 – Start of Bill Segment Record	15
1500 – Start of Bill Calc Record	16
1700 – Bill Calc Detail Record	17
1900 – End of Bill Calc Record	18
2100 – Service Reading Record	19
2400 – Service Quantity Record	21
2700 – Item Detail Record	22
2900 – End of Bill Segment Record	23
3100 – Histogram Record	24
3400 – Adjustment Record	26
3420 – Adjustment Calc line Record	27
3440 – End of Adjustment Record	28
3620 – Other Charges Summary Record	29
3640 – Premise Read Record	30
3600 – End of Service Agreement Record	32
3700 – End of Premise Record	33
3900 – Message Record	34
9999- End of Bill	34

Record Hierarchy – Sorted CC&B Bill Print Extract

Appendix B

Appendix C

Appendix D

Appendix E

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 DESIGN, DEVELOP, IMPLEMENT, AND OPERATE A CUSTOMER SELF SERVICE WEB SITE FOR WATER BILLING

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, December 15, 2010.

B2.2 Proposals determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Request for Proposal, or is unsure of the meaning or intent of any provision therein, the Bidder shall promptly notify the Contract Administrator of the error, discrepancy or omission at least five (5) Business Days prior to the Submission Deadline.

B3.3 If the Bidder is unsure of the meaning or intent of any provision therein, the Bidder should request clarification as to the meaning or intent prior to the Submission Deadline.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Request for Proposal will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.5 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Request for Proposal will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.6 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. CONFIDENTIALITY

B4.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator.

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Request for Proposals to the media or any member of the public without the prior written authorization of the Contract Administrator.

B5. ADDENDA

B5.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Request for Proposal, or clarifying the meaning or intent of any provision therein.

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Proposal. Failure to acknowledge receipt of an addendum may render a Proposal non-responsive.
- B6. SUBSTITUTES**
- B6.1 The Work is based on the Plant, Materials and methods specified in the Request for Proposal.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B16.1.

- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B6.10 Notwithstanding B6.2 to B6.9 and in accordance with B7.5, deviations inconsistent with the Request for Proposal document shall be evaluated in accordance with B17.1(a).

B7. PROPOSAL SUBMISSION

- B7.1 The Proposal shall consist of the following components:
- (a) Form A: Proposal;
 - (b) Form B: Prices;
 - (c) Form N: Bidder Responses.
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Proposal shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Proposal.
- B7.3.1 Bidders should submit one (1) unbound original (marked "original") and one (1) copy.
- B7.4 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.5 Bidders are advised that inclusion of terms and conditions inconsistent with the Request for Proposal, including the General Conditions, will be evaluated in accordance with B17.1(a).
- B7.6 The Proposal should be submitted enclosed and sealed in an envelope clearly marked with the RFP number and the Bidder's name and address.
- B7.6.1 Samples or other components of the Proposal which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the RFP number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Proposal Submission.
- B7.7 Proposals submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Proposals shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B8. PROPOSAL

- B8.1 The Bidder shall complete Form A: Proposal, making all required entries.
- B8.2 Paragraph 2 of Form A: Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

- (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

B8.2.1 If a Proposal is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of Form A: Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Proposal.

B8.4 Paragraph 11 of Form A: Proposal shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: Proposal should be printed below such signatures.

B8.5 If a Proposal is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Proposal and the Contract, when awarded, shall be both joint and several.

B9. PRICES

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.1.1 Notwithstanding C11.1.1, prices on Form B: Prices shall not include the Goods and Services Tax (GST) or Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Proposals.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

B10.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business; and
- (b) be financially capable of carrying out the terms of the Contract; and

- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program, if required, pursuant to The Workplace Safety and Health Act (Manitoba);
- B10.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. FORM N: BIDDER RESPONSES

- B11.1 The Bidder shall complete Form N: Bidder Responses where indicated.

B12. OPENING OF PROPOSALS AND RELEASE OF INFORMATION

- B12.1 Proposals will not be opened publicly.
- B12.2 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>
- B12.3 To the extent permitted, the City shall treat all Proposal Submissions as confidential, however the Bidder is advised that any information contained in any Proposal may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.
- B12.4 Following the award of Contract, a Bidder will be provided with information related to the evaluation of his submission upon written request to the Contract Administrator.

B13. IRREVOCABLE OFFER

- B13.1 The Proposal(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Proposal.
- B13.2 The acceptance by the City of any Proposal shall not release the Proposals of the other responsive Bidders and these Bidders shall be bound by their offers on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any offer shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of Form A: Proposal.

B14. WITHDRAWAL OF OFFERS

- B14.1 A Bidder may withdraw his Proposal without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding C22.5, the time and date of receipt of any notice withdrawing a Proposal shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Proposal or the Bidder's authorized representatives named in Paragraph 11 of Form A: Proposal, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Proposal until after the Submission Deadline has elapsed;
 - (b) open the Proposal to identify the contact person named in Paragraph 3 of Form A: Proposal and the Bidder's authorized representatives named in Paragraph 11 of Form A: Proposal; and
 - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Proposal withdrawn.
- B14.2 A Bidder who withdraws his Proposal after the Submission Deadline but before his offer has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B15. INTERVIEWS

- B15.1 The Contract Administrator may, in his sole discretion, interview Bidders during the evaluation process.

B16. NEGOTIATIONS

- B16.1 The City reserves the right to negotiate details of the Contract with any Bidder. Bidders are advised to present their best offer, not a starting point for negotiations in their Proposal Submission.
- B16.2 The City may negotiate with the Bidders submitting, in the City's opinion, the most advantageous Proposals. The City may enter into negotiations with one or more Bidders without being obligated to offer the same opportunity to any other Bidders. Negotiations may be concurrent and will involve each Bidder individually. The City shall incur no liability to any Bidder as a result of such negotiations.
- B16.3 If, in the course of negotiations pursuant to B16.2 or otherwise, the Bidder amends or modifies a Proposal after the Submission Deadline, the City may consider the amended Proposal as an alternative to the Proposal already submitted without releasing the Bidder from the Proposal as originally submitted.

B17. EVALUATION OF PROPOSALS

- B17.1 Award of the Contract shall be based on the following evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Request for Proposal or acceptable deviation therefrom:
 - (i) mandatory requirements (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10:
 - (i) mandatory qualifications (pass/fail);

- | | | |
|-----|--|-----|
| (c) | Total Bid Price | 20% |
| (d) | Form N Bidder Responses | |
| | (i) Design Methodology | 20% |
| | (ii) Development, Testing, Training, Implementation
and Documentation Methodology | 20% |
| | (iii) Operations Capabilities | 20% |
| | (iv) Experience and Financial Status | 20% |
| (e) | economic analysis of any approved alternative pursuant to B6. | |
- B17.2 Further to B17.1(a), the Award Authority may reject a Proposal as being non-responsive if the Proposal Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Proposal, or waive technical requirements or minor informalities or irregularities if the interests of the City so require.
- B17.3 Further to B17.1(b), the Award Authority shall reject any Proposal submitted by a Bidder who does not demonstrate, in his Proposal or in other information required to be submitted, that he is responsible and qualified.
- B17.4 Further to B17.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B17.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B17.4.2 Further to B17.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.
- B17.4.3 Further to B17.1(d)(i), Design Methodology shall be evaluated considering the information submitted in response to B7.1 and B11.1.
- B17.4.4 Further to B17.1(d)(ii), Development, Testing, Training, Implementation and Documentation Methodology shall be evaluated considering the information submitted in response to B7.1 and Form N: number 3 through 41.
- B17.4.5 Further to B17.1(d)(iii), Operations Methodology shall be evaluated considering the information submitted in response to B7.1 and Form N: number 42 through 56.
- B17.4.6 Further to B17.1(d)(iv), Experience and Financial Status shall be evaluated considering the information submitted in response to B7.1 and the information provided on Form N.
- B17.5 This Contract will be awarded as a whole.
- B17.6 If, in the sole opinion of the City, a Proposal does not achieve a pass rating for B17.1(a) and B17.1(b), the Proposal will be determined to be non-responsive and will not be further evaluated.
- B18. AWARD OF CONTRACT**
- B18.1 The City will give notice of the award of the Contract, or will give notice that no award will be made.
- B18.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Proposals are determined to be responsive.

- B18.2.1 Without limiting the generality of B18.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Proposal is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B18.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the most advantageous offer.
- B18.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Proposal upon written request to the Contract Administrator.
- B18.4 Notwithstanding C4 and Paragraph 6 of Form A: Proposal, the City will issue a purchase order to the successful Bidder in lieu of the execution of a Contract.
- B18.5 The Contract Documents, as defined in C1.1(n)(ii), in their entirety shall be deemed to be incorporated in and to form a part of the purchase order notwithstanding that they are not necessarily attached to or accompany said purchase order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

C0.1 These General Conditions are applicable to the Work of the Contract.

C1. DEFINITIONS

C1.1 Where used in these General Conditions and in the other documents forming part of the Contract:

- (a) **"Award Authority"** means the authority having the jurisdiction to award the Contract according to the City's by-laws, policies or procedures;
- (b) **"Bidder"** means any person submitting a Proposal for the Work;
- (c) **"Bidding Procedures"** means the portion of the Proposal by that name which sets out the terms and conditions governing the Bid, and a reference to a section, clause or subclause with the prefix **"B"** designates a section, clause or subclause in that portion of the Request for Proposal;
- (d) **"Business Day"** means any Calendar Day, other than a Saturday, Sunday, or a statutory or civic holiday;
- (e) **"C"** designates a section, clause or subclause in these General Conditions;
- (f) **"Calendar Day"** means the period from one midnight to the following midnight;
- (g) **"Change in Work"** means an addition, deletion or modification to the Work as described in the Contract at the time that the Contract is awarded and includes modifications in quantity or nature of Plant, Material or labour, methods, location or work schedule;
- (h) **"Chief Administrative Officer"** means the City employee holding that office or, if applicable, the successor to the authority or responsibility of such office;
- (i) **"City"** means The City of Winnipeg as continued under The City of Winnipeg Charter, Statutes of Manitoba 2002, c. 39, and any subsequent amendments thereto;
- (j) **"City Solicitor"** means the City employee holding that office or, if applicable, the successor to the authority or responsibility of such office;
- (k) **"Contract"** means the combined documents consisting of either:
 - (i) the agreement forwarded to the Contractor pursuant to C4 and all schedules thereto (consisting of the Request for Proposal and any documents and Drawings referred to and incorporated therein) together with the Proposal and any submissions required to be made by the Contractor after award, and all amendments to the foregoing; or
 - (ii) the Purchase Order prepared and forwarded to the Contractor which shall be deemed to include the Request for Proposal and any documents and Drawings referred to and incorporated therein, together with the Proposal and any submissions required to be made by the Contractor after award and all amendments to the foregoing.
- (l) **"Contract Administrator"** means the person designated as such in the Supplemental Conditions;
- (m) **"Contract Price"** means the price agreed upon for the Work and any adjustments thereto which may be required or agreed to pursuant to the Contract;
- (n) **"Contractor"** means the person undertaking the performance of the Work under the terms of the Contract;
- (o) **"Contractor's Facility"** means the lands and other places, including structures, provided by the Contractor for the performance of the Work;
- (p) **"Council"** means the Council of The City of Winnipeg;

- (q) **“Drawings”** means drawings which show the nature and scope of the Work to be performed and which have been prepared or approved by the Contract Administrator and are referred to in the Contract;
- (r) **“Manager of Materials”** means the City employee holding that office or, if applicable, the successor to the authority or responsibility of such office;
- (s) **“Material”** means any things, including goods, parts and equipment, which are to form part of the permanent Work;
- (t) **“may”** indicates an allowable action or feature which will not be evaluated;
- (u) **“must”** or **“shall”** indicates a mandatory requirement which will be evaluated on a pass/fail basis;
- (v) **“Person”** means an individual, firm, partnership, association or corporation, or any combination thereof, and includes heirs, administrators, executors or legal representatives of a person;
- (w) **“Plant”** means any things brought to or constructed upon the Site by the Contractor for the performance of the Work, including goods, tools, equipment, consumable supplies, fuel, power and utility connections therefor, but does not include Material;
- (x) **“Proposal”** means the offer contained in the Proposal Submission;
- (y) **“Proposal Submission”** means that portion of the Request for Proposal which must be completed or provided and submitted by the Submission Deadline in order to constitute a responsive Proposal;
- (z) **“Request for Proposal”** means the Proposal Submission, the Bidding Procedures, these General Conditions, the Supplemental Conditions, the Specifications, the Drawings and all addenda;
- (aa) **“Shop Drawings”** means all drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor, Subcontractor, manufacturer, supplier or distributor and which illustrate some portion of the Work;
- (bb) **“should”** indicates a desirable action or feature which will be evaluated on a relative scale;
- (cc) **“Site”** means the lands and other places, including structures, on, under, in or through which the Work is to be performed but does not include a Contractor’s Facility;
- (dd) **“Specifications”** means the portion of the Request for Proposal by that name which sets out the written description of the physical or functional characteristics of the Work, or any part thereof, including without limitation any requirement for testing or inspection, and a reference to a section, clause or subclause with the prefix **“E”** designates a section, clause or subclause in that portion of the Request for Proposal;
- (ee) **“Subcontractor”** means a person contracting with the Contractor for the performance of a part or parts of the Work or for the furnishing of Plant or Material and includes a Subcontractor’s subcontractor;
- (ff) **“Submission Deadline”** means the time and date set out in the Bidding Procedures for final receipt of Bids;
- (gg) **“Supplemental Conditions”** means the portion of the Request for Proposal by that name which sets out terms and conditions specific to the Contract, and supplements or modifies the General Conditions, and a reference to a section, clause or subclause with the prefix **“D”** designates a section, clause or subclause in that portion of the Request for Proposal;
- (hh) **“Total Performance”** means that the entire Work, except those items arising from the provisions of C12, have been performed in accordance with the Contract;
- (ii) **“Work”** means the carrying out and the doing of all things, whether of a temporary or permanent nature, that are to be done by the Contractor pursuant to the Contract and, without limiting the generality of the foregoing, includes the furnishing of all Plant, Material, labour and services necessary for or incidental to the fulfilment of the

requirements of the Contract, including all Changes in Work which may be ordered as herein provided.

- (jj) **Working Day**⁷ means any Calendar Day, other than a Saturday, Sunday, or a statutory or civic holiday, on which the Contract Administrator determines atmospheric and Site conditions are such that the Contractor is able to work at least seven (7) hours during the period between 7:00 a.m. Winnipeg time or the time the Contractor's operations normally commence, whichever is the earlier, and 7:00 p.m. Winnipeg time.

C2. INTERPRETATION

- C2.1 Where the Contractor consists of more than one person, the obligations of the Contractor shall be joint and several.
- C2.2 Wherever the singular or masculine is used, it shall be construed to mean the plural or the feminine or the neuter as the context may reasonably require.
- C2.3 Headings, titles and margin notes in the Contract are inserted for convenience only and shall not be considered in any construction or interpretation of the Contract.
- C2.4 In the event of conflicts between portions of the Contract, the following shall apply:
- (a) the executed agreement between the City and Contractor shall govern over all schedules or other documents forming part of the Contract;
 - (b) the Supplemental Conditions shall govern over the General Conditions;
 - (c) the General Conditions shall govern over Specifications;
 - (d) Specifications of a later date shall govern over Specifications of an earlier date;
 - (e) Specifications shall govern over Drawings;
 - (f) Drawings of a later date shall govern over Drawings of an earlier date;
 - (g) Drawings of larger scale shall govern over those of smaller scale;
 - (h) figured dimensions shown on a Drawing shall govern over scaled or implied dimensions on the same Drawing; and
 - (i) Drawings shall govern over the Bid.
- C2.5 The various portions of the Contract are intended to be read together and complement each other, and what is called for by any one shall be deemed to be called for by all.
- C2.6 The City and the Contractor acknowledge and agree that the Contractor is an independent contractor and neither the Contractor, nor any officer, servant or agent of the Contractor, shall be deemed to be an employee, agent, representative or servant of the City.
- C2.7 The Contract shall constitute the entire agreement between the City and the Contractor. There are no representations, warranties, covenants or agreements other than those contained in the Contract.

C3. DECLARATIONS

- C3.1 The Contractor declares that, in bidding for the Work and in entering into the Contract, he:
- (a) has investigated the nature of the Work to be done and all conditions that might affect his Proposal or his performance of the Work; or ,
 - (b) has not investigated the nature of the Work to be done or conditions;
- and, in either event, assumes all risk for conditions now existing or arising in the course of the Work which have been or could have been determined through such investigation, and that he did not and does not rely upon information furnished by the City or any of its servants or agents other than information furnished in writing for or in connection with the Proposal or the Contract by the Contract Administrator.

- C3.2 The Contractor declares that, in bidding for the Work and in entering into the Contract, he:
- (a) does so in good faith and that to the best of his knowledge no member of Council or any officer or employee of the City has any pecuniary interest, direct or indirect, in the Contract which has not been disclosed to and approved by the authority having jurisdiction;
 - (b) has not participated in any collusive scheme or combine;
 - (c) shall forfeit all claims under the Contract as well as refund to the City any monies paid to him, beyond his actual proven expenses for Work done, if C3.2(a) or (b) are shown to be false.

C4. EXECUTION OF CONTRACT

- C4.1 The Contractor shall execute the Contract in the manner stipulated by the City Solicitor and return the Contract, within seven (7) Calendar Days of receipt of the Contract, to the City Solicitor at the address indicated in C21.4.
- C4.2 If the Contractor does not execute and return the Contract as set out in C4.1, the Contractor may be determined by the City to have abandoned the Contract, whereupon the acceptance of the offer by the City shall be null and void, and the City shall be entitled to retain the performance security as liquidated damages.
- C4.3 No payments will be made by the City to the Contractor until the Contractor has executed and returned the Contract as set out in C4.1.

C5. AUTHORITY OF CONTRACT ADMINISTRATOR

General

- C5.1 The Contract Administrator shall be the City's representative throughout the duration of the Contract and shall have authority to act on behalf of the City to the extent expressly provided for in the Contract.

Contract

- C5.2 The Contract Administrator shall interpret or clarify the Contract or any part thereof which appears indefinite, not clear or contradictory to the Contractor.
- C5.3 The Contract Administrator may at any time correct errors or omissions in the Contract or issue additional Drawings or Specifications further detailing, explaining or modifying the Work. Such Drawings or Specifications shall either supplement or supersede those forming part of the Contract at the time the Contract was executed.

Inspection

- C5.4 The Contract Administrator may examine or inspect the Work or any part thereof and determine whether the Work meets the requirements of the Contract. The Contract Administrator may reject the Work or any part thereof which does not meet the requirements of the Contract.

Control

- C5.5 The Contract Administrator may give instructions or orders to the Contractor to the extent necessary to ensure that the Work is performed in an orderly manner and meets the requirements of the Contract.
- C5.5.1 The Contract Administrator may give instructions or orders to the Contractor's supervisor and such instructions or orders shall be deemed to have been given to the Contractor.
- C5.6 The Contract Administrator may order the Contractor to remove from the Work any person employed or retained by the Contractor or a Subcontractor in the performance of the Work who the Contract Administrator determines is incompetent, negligent or guilty of misconduct.

- C5.7 The Contract Administrator may order the Contractor to alter or improve his methods, to increase or improve his Plant, to furnish additional or more suitable Material, or to employ additional or more qualified labour if, at any time, the Contract Administrator determines that the Work is not being, or will likely not be, performed satisfactorily.
- C5.8 The Contract Administrator may order the Contractor to stop work or to take such remedial measures as the Contract Administrator considers necessary, if, at any time, the Contract Administrator determines that:
- (a) a danger to life or to property exists; or
 - (b) such stoppage or remedial measures may be necessary to ensure the performance of the Work in accordance with the requirements of the Contract.
- C5.9 Neither the giving of any orders by the Contract Administrator nor the carrying out of such orders by the Contractor shall entitle the Contractor to any extra payment, nor relieve the Contractor of his responsibilities under C6.
- C5.10 The Contract Administrator shall determine if and when Total Performance is achieved and shall certify the date thereof.
- C5.11 If the Contractor disputes a determination or order of the Contract Administrator on any of the foregoing matters, the Contractor shall act in accordance with the Contract Administrator's determination or order. The Contractor may concurrently appeal the determination or order of the Contract Administrator to the Chief Administrative Officer as provided for in C19.

C6. RESPONSIBILITIES OF CONTRACTOR

General

- C6.1 Except as otherwise provided in the Contract, the Contractor shall be solely responsible for means, methods, techniques, sequences and procedures, and for coordinating the various parts of the Work so as to ensure its proper completion in a sound and workmanlike manner, in all respects in strict conformity with the Contract and in accordance with the approved work schedule.
- C6.2 The Contractor shall have complete control over the methods of performing the Work and shall direct and supervise the Work so as to ensure conformance with the Contract.
- C6.3 The Contractor shall provide all Plant, Material, labour, services and incidentals necessary for the performance of the Work.
- C6.4 The Contractor shall be responsible for any Work not explicitly set out in the Contract but which may be reasonably implied for the proper completion of the Work.
- C6.5 Unless otherwise specified in the Specifications, all Material shall be new, fit for the purpose intended and shall meet or exceed the kind, quality and quantity of same specified in the Contract. If required, the Contractor shall provide evidence satisfactory to the Contract Administrator that the foregoing requirements have been met.

Contract

- C6.6 The Contractor shall perform, complete and maintain the Work in strict accordance with the Contract.
- C6.7 If the Contract or any part thereof appears indefinite, not clear or contradictory, the Contractor shall refer such feature or features to the Contract Administrator for interpretation or clarification.
- C6.8 The Contractor shall obey, perform and comply with the Contract Administrator's orders, instructions, rules and procedures with respect to the Work or concerning the conduct thereof,

promptly, efficiently and to the satisfaction of the Contract Administrator and the Contractor will assist other contractors, their employees and agents to do the same.

- C6.9 The Contractor shall be responsible for conveying the interpretation or clarification of the Contract, as given by the Contract Administrator, to Subcontractors.
- C6.10 The Contractor shall prepare and submit all drawings, schedules, documents or information required by the Contract and such other drawings, schedules, documents or information as may reasonably be required by the Contract Administrator.

Laws and Regulations

- C6.11 The Contractor shall comply with all laws, by-laws, ordinances, regulations, codes and orders of authorities having jurisdiction which are or come into force during the performance of the Work and which relate to the Work. Where there are two or more laws, by-laws, ordinances, regulations or codes applicable to the Work, the most restrictive shall apply.
- C6.12 The Contractor shall procure approvals, clearances, permits, licences and certificates required by law or by any by-laws, ordinances, regulations, codes or orders of the authorities having jurisdiction for the performance of the Work, but this shall not include the obtaining of permanent easements or rights of servitude.
- C6.13 The Contractor shall give any notices required by law or by by-laws, ordinances, regulations, codes or orders of the authorities having jurisdiction and which relate to the Work.
- C6.14 The Contractor shall be registered with the Workers Compensation Board of Manitoba, shall provide and maintain workers compensation coverage throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.
- C6.15 The Contractor shall not be responsible for verifying that the Contract complies with the applicable laws, by-laws, ordinances, regulations, codes and orders relating to the Work.

Patents and Royalties

- C6.16 If the Contract requires or the Contractor desires the use of any design, device, material or process covered by letters patent, copyright, trademark or trade name, the Contractor shall provide for such use by suitable legal agreement with the owner or licensee.
- C6.16.1 Upon request of the Contract Administrator, the Contractor shall provide the City with a copy of the said agreement.
- C6.17 If the City or the Contractor is served with a claim or notice of an infringement or alleged infringement of any patent, copyright, trademark or trade name, the party so served shall immediately give notice thereof to the other party.
- C6.18 If the City or the Contractor is prevented by injunction from using any design, device, material or process covered by letters patent, copyright, trademark or trade name, the Contractor shall, at his own cost, substitute an equally suitable design, device, material or process, all subject to the prior approval of the Contract Administrator.

Personnel

- C6.19 The Contractor shall provide competent, suitably qualified personnel to perform the Work.
- C6.20 If the Contract Administrator orders a person to be removed from the Work, the Contractor shall comply forthwith. Any person so removed shall not be re-employed on the Work by the Contractor or by a Subcontractor, without the written approval of the Contract Administrator.

Control

- C6.21 The Contractor must arrange and carry on his Work so as not to conflict with the Work being carried on or to be carried on for the City by other contractors or by the City's employees. If the

Contractor finds it difficult to work in harmony with such parties, he shall notify the Contract Administrator promptly.

- C6.22 The Contractor shall perform the Work so as to progress continuously with the Work or any part thereof and in such a manner as to ensure the proper completion of the Work or any part thereof, within the time stipulated.
- C6.23 The Contractor shall be solely responsible for safety at the Site and for compliance with all laws, rules, regulations and practices required by the applicable safety legislation.

Subcontractors

- C6.24 The Contractor shall not employ any Subcontractor to whom the Contract Administrator objects, acting reasonably.
- C6.24.1 The Contractor agrees that the Subcontractors identified in his Bid, or in any subsequent submission, are the Subcontractors proposed to be used to carry out those parts of the Work noted therein.
- C6.24.2 The Contractor shall not add, remove or replace any Subcontractor, or change the part of the Work to be performed by a Subcontractor, without the prior approval of the Contract Administrator.
- C6.25 The Contractor, with respect to Work to be performed under subcontract, shall:
- (a) enter into contracts or written agreements with his Subcontractors to require them to perform their work in complete conformance with and subject to the terms and conditions of the Contract; and
 - (b) be as fully responsible to the City for acts and omissions of his Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by him.
- C6.26 The Contractor shall incorporate the terms and conditions of the Contract into all subcontract agreements he enters into with his Subcontractors.
- C6.27 The Contractor shall make prompt payment to his Subcontractors, his employees or on account of the purchase or rental of Plant or Material.
- C6.28 The Contractor shall promptly secure a discharge of a lien or trust claim served upon the City.

C7. CHANGES IN WORK

General

- C7.1 The City shall have the right to order a Change in Work at any time after award of the Contract.
- C7.2 If, at any time after award of the Contract, the Contractor is of the opinion that a Change in Work is necessary to accomplish the result intended by the Contract or if the Contractor considers it desirable that a Change in Work be approved, he shall promptly provide notice thereof to the Contract Administrator, including:
- (a) the reason for the proposed Change in Work;
 - (b) a detailed description of the proposed Change in Work;
 - (c) the Contractor's proposed method(s) to determine the adjustment, if any, in Contract Price pursuant to C7.4.
- C7.2.1 Without limiting the generality of C7.2, if the Contractor observes:
- (a) any substantial difference in the nature of the surface or subsurface conditions at the Site, or the location, nature, quality or quantity of the materials to be removed, from those set out in the Contract; or

- (b) that the Contract is at variance with any laws, ordinances, rules, regulations or codes of authorities having jurisdiction, or if changes are made to any laws, ordinances, rules, regulations and codes subsequent to the Submission Deadline which require modifications to the Contract;

the Contractor shall immediately notify the Contract Administrator.

- C7.3 The Contract Administrator shall determine whether a Change in Work is necessary or desirable and whether a corresponding adjustment to the Contract Price is required.
- C7.3.1 If the Contract Administrator determines that no Change in Work is necessary or desirable, he will issue a notice stating his determination.
- C7.3.2 If the Contract Administrator determines that a Change in Work is necessary or desirable but no corresponding adjustment to the Contract Price is required, he will issue a notice approving the Change in Work and stating his determination.
- C7.3.3 If the Contract Administrator determines that a Change in Work is necessary or desirable, which requires a corresponding adjustment to the Contract Price, and he is able to determine such adjustment based on the available information, he shall issue a notice approving the Change in Work and stating his determination regarding the method(s) to be used to determine the adjustment in Contract Price pursuant to C7.4.
- C7.3.4 If the Contract Administrator determines that a Change in Work is necessary or desirable, which requires a corresponding adjustment to the Contract Price, and he requires further information to determine such adjustment, he shall issue a notice stating his determination and requiring the Contractor to submit the Contractor's proposed method(s) to determine the adjustment in Contract Price pursuant to C7.4, and upon receipt and evaluation of such information, he shall issue a notice in accordance with C7.3.3.

Valuation of a Change in Work

- C7.4 The adjustment in Contract Price resulting from a Change in Work shall be determined by one or more of the following methods:
- (a) by estimate in a lump sum;
 - (b) by the unit prices and methods of measurement set out in the Contract or subsequently agreed upon;
 - (c) by the actual cost of the Change in Work to the Contractor plus a fixed fee;
 - (d) by the actual cost of the Change in Work to the Contractor plus fifteen percent (15%) on any portion of the Change in Work undertaken by the Contractor's own forces or plus ten percent (10%) on any portion of the Change in Work undertaken by a Subcontractor.
- C7.4.1 For the purposes of C7.4(c) or (d), "actual cost" on any portion of the Change in Work undertaken by the Contractor's own forces shall mean the direct cost of labour plus an allowance for direct supervision and payroll burden (including Employment Insurance, Canada Pension, Payroll Tax, Workers Compensation assessments and vacation pay), purchase or rental of Plant and Material and any other payments made by the Contractor with the prior approval of the Contract Administrator that are necessary for the performance of the Change in Work.
- C7.4.2 For the purposes of C7.4(c) or (d), "actual cost" on any portion of the Change in Work undertaken by a Subcontractor shall mean the amount invoiced by the Subcontractor and paid by the Contractor, net of any discounts and excluding any late payment interest or penalties.
- C7.5 If a Change in Work results in a reduction in the Contract Price, no claim may be made for damages on the ground of loss of anticipated profit on Work so diminished or on any other ground provided that the aggregate reduction in the Contract Price does not exceed twenty percent (20%) of the price agreed upon for the Work as of the date of the award of the Contract.
- C7.5.1 Reductions in the Contract Price as a result of:

- (a) Changes in Work requested by the Contractor;
- (b) a deduction, pursuant to C10.5(d), for defective or deficient Work;
- (c) a decrease, pursuant to C11.3, due to a change in tax; or
- (d) the City's application of a remedy for an event of default;

shall not be considered in calculating the aggregate reduction in the Contract Price for the purposes of C7.5.

C7.6 If a Change in Work diminishes the Work, or any part thereof, resulting in:

- (a) extra cost to the Contractor, directly attributable to the diminution, for which he would not be entitled to payment on a unit price basis (e.g., loss of volume discounts); or
- (b) loss to the Contractor in respect of Material required by the City to be purchased by him for the Work but not used thereon as a direct result of the diminution (e.g., restocking charges);

the Contractor shall be compensated therefor by the City in the sum or sums determined by the Contract Administrator.

C7.7 If the method of valuation or measurement or the adjustment to the Contract Price cannot be promptly agreed upon and the Contract Administrator requires the Change in Work to proceed, then the Contract Administrator will determine the method of valuation and measurement and the adjustment to the Contract Price. The Contract Administrator shall issue a notice approving the Change in Work and setting out the method of valuation, measurement, and any approved adjustments to the Contract Price.

C7.8 If the Contractor disputes a determination made by the Contract Administrator, the Contractor shall act in accordance with the Contract Administrator's determination. The Contractor may concurrently appeal the determination of the Contract Administrator to the Chief Administrative Officer as provided for in C19.

Cost Records

C7.9 If a valuation is required pursuant to C7.4 or C7.6, the Contractor shall provide the Contract Administrator with:

- (a) detailed and accurate statements showing:
 - (i) description, cost (including expenses for operation and maintenance) and time for Plant used by the Contractor;
 - (ii) description, cost and quantity for Material used by the Contractor;
 - (iii) rate of pay and hours of work for each of the persons employed by the Contractor;and
- (b) access to any cost records (including payroll records, time books and invoices) or other data necessary to verify the accuracy of such statements.

C8. RIGHT OF ENTRY

C8.1 The Contractor shall not be entitled to exclusive possession of the Site.

C8.2 The City shall have the right, for itself, its agents, representatives or other persons, to enter, occupy or use any portion of the Site or the Work, at any time and for so long a time as the Contract Administrator may require.

C8.3 Such entry, occupation or use shall not constitute acceptance of the Work by the City nor shall it relieve the Contractor of responsibility to complete the Work.

C9. RISK AND RESPONSIBILITY

- C9.1 Plant or Material brought to the Site or the Work by the Contractor shall remain at the risk and the responsibility of the Contractor from the commencement of the Work until:
- (a) Material is incorporated into the Work; or
 - (b) Plant or Material is removed from the Site or the Work by the Contractor.
- C9.2 The Contractor shall be liable to the City for any loss of or damage to Plant or Material that is supplied to or placed in the care, custody and control of the Contractor by the City in connection with the Contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control, from the commencement of the Work until:
- (a) Material is incorporated into the Work; or
 - (b) Plant or Material is returned, in its original condition, to the City.
- C9.3 The Work shall remain at the risk and the responsibility of the Contractor from the commencement of the Work until the date of Total Performance.
- C9.4 The Contractor shall, at his own cost, be required to maintain the Work, make good all damage thereto and imperfections therein and to deliver the completed Work to the City in accordance with the provisions of the Contract.

C10. INSPECTION

General

- C10.1 The Contractor shall provide the Contract Administrator access, whether at the Site or at the Contractor's Facility or the premises of any Subcontractor, to observe and inspect the Work and its progress.
- C10.2 The Contractor shall provide the Contract Administrator any samples required to inspect the Work.
- C10.3 The Contractor shall provide the Contract Administrator any and all assistance which he may require to observe and inspect the Work.
- C10.4 The inspection herein provided for shall in no way relieve the Contractor of full responsibility for the quality, proper operation and performance of the Work.

Defective Work

- C10.5 If the Contract Administrator determines that the Work, or any part thereof, is defective or deficient, the City shall have the right to do any one or more of the following in addition to anything permitted elsewhere in the Contract or by law:
- (a) if the Contract Administrator determines that any Plant is defective, deficient or otherwise unfit for the purpose intended, the Contract Administrator may direct the Contractor to remove such Plant from the Site and promptly replace it with Plant which meets the requirements of the Contract and is fit for the purpose intended;
 - (b) if the Contract Administrator determines that any Material which is not yet incorporated into the Work is defective, deficient or otherwise unfit for the purpose intended, the Contract Administrator may direct the Contractor to remove such Material from the Site and promptly replace it with Material which meets the requirements of the Contract and is fit for the purpose intended;
 - (c) if the Contract Administrator determines that the Work or any portion thereof, including any Material which is incorporated therein, is defective, deficient or otherwise unfit for the purpose intended, the Contract Administrator may direct the Contractor to repair, redo, replace or otherwise remedy the defect or deficiency;

- (d) if the Contract Administrator determines that it is not expedient to correct defective or deficient Work, the City may deduct from the Contract Price the difference between the value of the Work as done and that called for by the Contract, the amount of which shall be determined by the Contract Administrator.

C10.6 The Contractor shall, without delay, carry out the directives of the Contract Administrator pursuant to C10.5. In addition, the Contractor shall be responsible for the cost of any additional inspections necessitated thereby.

C10.7 The City shall be entitled, in its sole discretion, to use the Work or any portion thereof notwithstanding that it may be defective or deficient, and such use shall not constitute acceptance of any defects or deficiencies nor shall it relieve the Contractor of responsibility to complete the Work.

C11. MEASUREMENT AND PAYMENT

General

C11.1 The amounts to be paid by the City to the Contractor shall be the sums certified by the Contract Administrator.

C11.1.1 For unit price Contracts, such sums shall be determined by the Contract Administrator upon the basis of the unit prices for the various classes of the Work stated on Form B: Prices. The total amount to be paid to the Contractor for the Work will be the amount arrived at by measuring the amount of each class of the Work listed on Form B: Prices and performed in accordance with the Contract, and pricing the same, in accordance with the unit prices stated thereon.

C11.1.2 For lump sum Contracts, such sums shall be determined by the Contract Administrator upon the basis of the lump sum price stated on Form B: Prices.

C11.1.3 Prices stated on Form B: Prices shall be deemed to include:

- (a) duty;
- (b) freight and cartage;
- (c) Federal and Provincial taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
- (d) profit and all compensation which shall be due to the Contractor for the Work and all details necessarily connected with the completion of the Work and all risks and contingencies connected therewith.

Increased or Decreased Costs

C11.2 The Contract Price shall not be increased or decreased by reason of any increase or decrease in the cost of the Work to the Contractor except as provided for herein.

C11.3 The Contract Price shall be adjusted if any change in a tax imposed under the Excise Act, the Excise Tax Act, the Customs Act, the Customs Tariff, The Mining Tax Act (Manitoba), or The Retail Sales Tax Act (Manitoba):

- (a) occurs after the Submission Deadline;
- (b) applies to Material; and
- (c) affects the cost of that Material to the Contractor.

C11.4 If a change referred to in C11.3 occurs, the Contract Price shall be increased or decreased by an amount equal to the amount that is established, by an examination of the relevant records of the Contractor, to be the increase or decrease in the cost incurred that is directly attributable to that change.

- C11.5 For the purpose of C11.3, where a tax is changed after the Submission Deadline but public notice of the change has been given by either the Federal or Provincial Minister of Finance before that date, the change shall be deemed to have occurred before the Submission Deadline and the Contractor shall not be entitled to an increase in the Contract Price.

Final Payment

- C11.6 Approval by the City of final payment shall be subject to issuance by the Contract Administrator of a certificate of Total Performance.
- C11.7 Neither the issuance of a certificate of Total Performance nor final payment shall relieve the Contractor from his responsibilities either under C12 or as a result of any breach of the Contract by the Contractor including, but not limited to, defective or deficient Work appearing after Total Performance, nor shall it conclude or prejudice any of the powers of the Contract Administrator or the Chief Administrative Officer hereunder.
- C11.8 Subject to C11.9, acceptance by the Contractor of final payment shall constitute a waiver and release by him of all claims against the City whether for payment for Work done, damages or otherwise arising out of the Contract.
- C11.9 If the Contractor disputes a determination made by the Contract Administrator with respect to an interim or final payment, the Contractor shall be paid in accordance with the Contract Administrator's determination. The Contractor may concurrently appeal the determination of the Contract Administrator to the Chief Administrative Officer as provided for in C19.

C12. WARRANTY

General

- C12.1 The Contractor warrants that the Work will be free of any and all defects or deficiencies during the warranty period.

Warranty Period

- C12.2 Unless specifically stated otherwise in the Supplemental Conditions, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter unless extended pursuant to C12.2.1, in which case it shall expire when provided for under these sections.
- C12.2.1 If all outstanding defects or deficiencies have not been corrected to the satisfaction of the Contract Administrator by at least two (2) weeks prior to the date on which the warranty would expire except for this C12.2.1, then the Contract Administrator may require the Contractor to extend the warranty period for a further period of one (1) year for those defects or deficiencies in the Work identified by the Contract Administrator as still outstanding and uncorrected or for any portion of the Work whose use or operation is prevented by such defects or deficiencies.
- C12.3 Notwithstanding C12.2, if any law of Manitoba or of the jurisdiction in which the Work was manufactured requires, or if the manufacturer provides, a longer warranty period or a warranty which is more extensive in its nature, then the provisions of such law or manufacturer's warranty shall apply.

Warranty Work

- C12.4 The Contract Administrator shall notify the Contractor of observed defects or deficiencies and damage, if any, arising or resulting from such defects or deficiencies, within the warranty period.
- C12.5 The Contractor shall correct, to the satisfaction of the Contract Administrator, all defects, deficiencies and damage identified by the Contract Administrator in the manner and within the time period(s) specified in the notice.

C12.6 If the Contractor disagrees with the Contract Administrator's determination under C12.4, he shall nonetheless comply with C12.5. The Contractor may concurrently appeal the determination of the Contract Administrator as provided for in C19.

Acceptance of the Work

C12.7 The Contract Administrator shall certify acceptance of the Work upon:

- (a) the satisfactory performance of the Work during the warranty period;
- (b) the Contractor having fully complied with C12.5; and
- (c) the successful conclusion of any tests required under the Contract.

C12.8 Only certification of acceptance of the Work shall constitute:

- (a) acceptance of the Work; or
- (b) acceptance that the Work or any part thereof has been duly performed; or
- (c) acceptance of the accuracy of any claim of the Contractor.

C12.9 Certification of acceptance of the Work shall not, however, relieve the Contractor from his responsibilities for any breach of the Contract including, but not limited to, defective or deficient Work appearing after the date of such certification.

C13. GOVERNING LAW

C13.1 The Contract has been entered into in the Province of Manitoba and shall be governed by and construed and enforced in accordance with the laws of the Province of Manitoba and of Canada as applicable therein. The parties hereby irrevocably and unconditionally agree to the exclusive jurisdiction of the Courts in the Province of Manitoba and all courts competent to hear appeals therefrom.

C14. ASSIGNMENT

C14.1 The Contractor shall not assign the Contract or any payments thereunder without the prior consent of the City.

C14.2 The Contract shall inure to the benefit of and be binding on the respective heirs, executors, administrators, successors and assigns of the City and the Contractor.

C15. FORCE MAJEURE

C15.1 If the Contractor is delayed in the performance of the Work by reason of strikes, lock-outs (including lock-outs decreed for its members by a recognized contractors' association of which the Contractor is a member), an act of God, or any other cause which the Contractor satisfies the Contract Administrator to be totally beyond his control, the work schedule shall be adjusted by a period of time equal to the time lost due to such delays.

C15.2 No extension for delay shall be approved unless a notice of the claim is received by the Contract Administrator from the Contractor within seven (7) Calendar Days of the date on which the cause of delay arose.

C15.3 Any delay or failure by the City to perform its obligations under this Contract shall be excused, to the extent that the delay or failure is caused by an event or occurrence beyond the reasonable control of the City and without its fault or negligence, such as by way of example and not by way of limitation, strikes, lock-outs, or acts of God, provided that written notice of the delay shall be given by the City within seven (7) Calendar Days of the date on which the cause of delay arose.

C15.4 Any notice or claim for extension must state the cause of delay and the length of extension requested.

C15.4.1 In the case of a continuing cause of delay, only one claim for an extension shall be necessary.

C16. INDEMNITY

C16.1 The Contractor shall save harmless and indemnify the City in the amount of the Contract value against all costs, damages or expenses arising from actions, claims, demands and proceedings, by whomsoever brought, made or taken as a result of acts or omissions of the Contractor, his Subcontractors, employees or agents in the performance or purported performance of the Work, and more particularly from:

- (a) accidental injury to or death of any person whether retained by or in the employ of the Contractor or not, arising directly or indirectly by reason of the performance of the Work, or by reason of any trespass on or damage to property;
- (b) damage to any property owned in whole or in part by the City, or which the City by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain;
- (c) damage to, or trespass or encroachment upon, property owned by persons other than the City;
- (d) any claim for lien or trust claim served upon the City;
- (e) failure to pay a Workers Compensation assessment, or Federal or Provincial taxes;
- (f) unauthorized use of any design, device, material or process covered by letters patent, copyright, trademark or trade name in connection with the Work;
- (g) inaccuracies in any information provided to the City by the Contractor.

C16.2 The City has the right, acting reasonably and upon notice to the Contractor, to settle any such action, proceeding, claim or demand and charge the Contractor with the amount so paid or to be paid in effecting a settlement.

C16.3 The Contractor shall pay to the City the value of all legal fees and disbursements required to settle any such claim or to defend the City against any such claim, action, proceeding, claim or demand notwithstanding that the settlement or defence of the said action, proceeding, claim or demand was undertaken on behalf of the City by a salaried employee of the City.

C16.4 If the Contractor fails to make any payment required to be made to the City pursuant to C16.2 and C16.3, the City shall be entitled to deduct the amount of such payment from any payment required to be made by the City to the Contractor under the Contract or take whatever other remedies against the Contractor that the City may have at law.

C17. EVENTS OF DEFAULT

C17.1 An event of default will be deemed to have occurred if the Contractor:

- (a) abandons the Work; or
- (b) is adjudged bankrupt or files for bankruptcy, becomes insolvent, makes a general assignment for the benefit of his creditors, or has a receiver or liquidator appointed in respect of his assets; or
- (c) is not performing or has not been performing the Work, or any part thereof, in a sound and workmanlike manner and in all respects in strict conformity with the Contract; or
- (d) is not progressing continuously with the Work or any part thereof, and in such a manner as to ensure the completion of the Work or any part thereof, in accordance with the work schedule; or
- (e) fails to take down, repair, redo, replace or otherwise remedy any defective or deficient Work, or to remove any defective or deficient Material; or
- (f) fails to remedy defects or deficiencies during the warranty period in the manner and within the time periods specified by the Contract Administrator; or

- (g) fails to make prompt payment to his Subcontractors, his employees or on account of the purchase or rental of Plant or Material; or
- (h) fails to promptly secure a discharge of a claim for lien or trust claim served upon the City; or
- (i) fails to comply with any laws, by-laws or statutory regulations; or
- (j) fails to provide competent supervision at the Site; or
- (k) fails to submit any schedules, documents or information required by the Contract; or
- (l) refuses or neglects to comply with an order given by the Contract Administrator; or
- (m) commits any other breach of the Contract.

C17.2 Any provision of the Contract may be waived only by express waiver in writing by the Contract Administrator. No express waiver of any provision shall imply the waiver of any other provision.

C18. CITY'S RIGHTS AND REMEDIES

General

C18.1 If an event of default has occurred, the City may do any one or more of the following:

- (a) withhold or retain the whole or part of any payment;
- (b) take the whole of the Work, or any part or parts thereof out of the control of the Contractor;
- (c) demand payment for any amount owed to the City;

all as more particularly set forth in C18.3 to C18.6 below.

C18.2 The duties and obligations imposed upon the Contractor by the Contract and the rights and remedies available to the City hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed upon the Contractor or available to the City at law.

Withholding of Payment

C18.3 If an event of default has occurred, the City may withhold or retain the whole or part of any payment to the Contractor.

C18.4 The City may apply the amount withheld or retained to:

- (a) pay any person to whom the Contractor is indebted in respect of Material, labour or services furnished for the Work;
- (b) secure the discharge of a lien or trust claim served upon the City;
- (c) indemnify, compensate or reimburse the City for amounts paid or costs incurred by the City in connection with the event of default.

C18.5 Payment of such amounts shall discharge the City's liability to the Contractor to the same extent as payment directly to him.

C18.6 Upon remedy of the event of default, any amount remaining from the amount withheld will be released to the Contractor.

Taking the Work out of the Contractor's Control

C18.7 If an event of default has occurred, the City may, without process or action at law, upon giving the Contractor notice, take the whole of the Work, or any part or parts thereof out of the control of the Contractor.

C18.8 Upon such notice being given to the Contractor, he shall immediately discontinue the Work or any part or parts thereof specified in the said notice.

- C18.9 The taking of the Work or any part thereof out of the Contractor's control pursuant to C18.7 shall not relieve or discharge the Contractor from any obligation under the Contract or imposed upon him by law except the obligation to complete the performance of that part of the Work that was taken out of the Contractor's control.
- C18.10 The City shall have the right, subject to C19, to complete, by contract or with its own forces, the Work taken out of the Contractor's control. The City shall not be required to obtain the lowest price to complete the Work taken out of the Contractor's control.
- C18.11 If the cost to the City of completing the Work or portion thereof as aforesaid is less than the amount to which the Contractor would have been entitled under the Contract for so doing, the Contractor shall have no claims in respect thereof against the City. If the cost of the Work performed by the City is more than the amount to which the Contractor would have been entitled under the Contract for the same Work, the City shall have a claim against the Contractor for such excess costs.
- C18.12 When any portion of the Work is being carried on by the City, by contract or otherwise, the Contractor shall continue to perform the remainder of the Work in accordance with the Contract, and in such manner as in no way to hinder or interfere with the persons performing the portion of the Work being carried on by the City.

Demand for Payment

- C18.13 If an event of default has occurred, the City may demand payment from the Contractor for amounts paid or costs incurred by the City in connection with the event of default.
- C18.14 The Contractor shall, within seven (7) Calendar Days of receipt of a notice from the City, pay the City the amount set out in the notice.

C19. CONTRACTOR'S RIGHT TO APPEAL

- C19.1 If the Contractor disagrees with a determination or order of the Contract Administrator he may, within seven (7) Calendar Days after receiving notice of the Contract Administrator's determination or order, notify the Chief Administrative Officer of his appeal with respect thereto and request a determination thereon from the Chief Administrative Officer.
- C19.2 If the Contractor disagrees with the Chief Administrative Officer's determination he may request that the dispute be referred to arbitration in accordance with C20, by providing notice to the Chief Administrative Officer within seven (7) Calendar Days after receiving notice of the Chief Administrative Officer's determination.
- C19.3 If the Contractor neglects or fails to observe fully and faithfully the above conditions, he shall be deemed to have accepted the Contract Administrator's determination and to have waived any said claim, at law or otherwise.

C20. ARBITRATION

Requests for Arbitration

- C20.1 If, at any time before the termination of the warranty period, any dispute, difference or question shall arise between the City and the Contractor regarding the Work, then any such dispute, difference or question may, with the consent of both the City Solicitor, on behalf of the City, and the Contractor, be referred to arbitration.
- C20.2 The party desiring arbitration (the "Requesting Party") shall request the consent of the other party (the "Other Party") to refer a particular dispute, difference or question to arbitration.
- C20.3 The Other Party shall reply to the request within seven (7) Calendar Days of receiving same.

Referral to a Single Arbitrator

- C20.4 If the Other Party has consented to arbitration, the Requesting Party shall nominate an arbitrator (the "Requesting Party's Nominee") within seven (7) Calendar Days of receiving the reply. The Other Party shall have seven (7) Calendar Days after receiving notice of the nomination to accept or reject the Requesting Party's Nominee.
- C20.5 If the Other Party accepts the Requesting Party's Nominee, the dispute, difference or question shall be promptly referred to him or her.

Referral to a Panel of Arbitrators

- C20.6 If the Other Party rejects the Requesting Party's Nominee, it shall, within seven (7) Calendar Days of rejection, appoint its own arbitrator.
- C20.7 The Requesting Party shall, within seven (7) Calendar Days of receiving the Other Party's rejection, appoint its own arbitrator.
- C20.8 The arbitrators appointed under C20.6 and C20.7 shall, within seven (7) Calendar Days of the date on which the last of them was appointed, appoint a third arbitrator (the "Panel Chair") who will act as chair of the arbitration panel.

General

- C20.9 The Arbitration Act (Manitoba) or any successor legislation thereto shall apply to the arbitration in all respects except as expressly otherwise provided in these General Conditions.
- C20.10 The single arbitrator or the Panel Chair, as the case may be, shall determine the procedure to be followed in the arbitration, which shall be consistent with The Arbitration Act (Manitoba) or any successor legislation thereto.
- C20.11 Where the matter proceeds with a single arbitrator, each party shall be responsible for its own legal expenses, expenses to produce expert evidence or other expenses voluntarily incurred, and for an equal share of the fees and expenses of the single arbitrator and of any other expenses related to the arbitration.
- C20.12 Where the matter proceeds with an arbitration panel, each party shall be responsible for its own legal expenses, expenses to produce expert evidence or other expenses voluntarily incurred, for the fees and expenses of the arbitrator appointed by it, and for an equal share of the fees and expenses of the Panel Chair and of any other expenses related to the arbitration.

C21. NOTICES

- C21.1 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required or permitted to be given under the Contract shall be in writing and shall be delivered by hand, by facsimile transmission (fax) or by mail.
- C21.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in C21.3 or C21.4, or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator.
- C21.3 All notices of appeal to the Chief Administrative Officer shall be sent to the following facsimile number:

The City of Winnipeg
Chief Administrative Officer Secretariat
Facsimile No.: (204) 949-1174

C21.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg
Internal Services Department
Legal Services Division

Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1

Facsimile No.: (204) 947-9155

C21.4.1 Either party may, by giving notice, designate another address or addresses at which it will accept delivery of notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications.

C21.4.2 Delivery to the Contractor's designated supervisor at the Site shall constitute delivery to the Contractor.

C21.5 Any notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications given as provided herein shall:

- (a) if delivered by hand, be deemed to have been received on the day of receipt;
- (b) if delivered by facsimile transmission, be deemed to have been received on the day of transmission, if a Business Day, or if not a Business Day, on the Business Day next following the day of transmission; and
- (c) if delivered by mail, be deemed to have been received on the second Business Day on which mail is delivered by Canada Post following the date of mailing.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

D1.1 In addition to the *General Conditions for Supply of Services*, these Supplemental Conditions are applicable to the Work of the Contract.

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the design, development (coding, testing, training and documenting), implementation and ongoing operation of a customer access WEB site for the City's Water Billing system.

D2.2 The major components of the Work are as follows:

- (a) In collaboration with City staff prepare a detailed design (list of functional and technical requirements) of how the Customer Access WEB site for water bills will function;
- (b) Based on the defined design specifications (D2.2(a)) develop a computerized system that will meet the specifications of the design, provide functional and technical documentation for the system, participate in the testing of the developed system, implement the developed system into a production operational environment;
- (c) Provide for the ongoing maintenance and operation of the system for the City and make changes to the system on an as required basis.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Mr. Greg Lyon
Utility Systems Coordinator
Water and Waste Department

Telephone No. (204) 986-7548
Facsimile No. (204) 986-3745

D3.2 At the pre-commencement meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4. CONTRACTOR'S SUPERVISOR

D4.1 Further to C6.19, the Contractor shall employ and keep on the Work, at all times during the performance of the Work, a competent supervisor and assistants, if necessary, acceptable to the Contract Administrator. The supervisor shall represent the Contractor on the Site. The supervisor shall not be replaced without the prior consent of the Contract Administrator unless the supervisor proves to be unsatisfactory to the Contractor and ceases to be in his employ.

D4.2 Before commencement of Work, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D4.2.1 Further to C5.5 Contract Administrator may give instructions or orders to the Contractor's supervisor and such instructions or orders shall be deemed to have been given to the Contractor.

D5. CONFIDENTIALITY AND OWNERSHIP OF INFORMATION

- D5.1 Information provided to the Contractor by the City or acquired by the Contractor during the course of the Work is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator.
- D5.2 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City. The Contractor shall not disclose or appropriate to its own use, or to the use of any third party, all or any part thereof without the prior written consent of the Contract Administrator.
- D5.3 The Contractor shall not make any statement of fact or opinion regarding any aspect of the Contract to the media or any member of the public without the prior written authorization of the Contract Administrator.

D6. NOTICES

- D6.1 Notwithstanding C21.3, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:
- The City of Winnipeg
Chief Financial Officer
Facsimile No.: (204) 949-1174

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

- D7.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D8. INSURANCE

- D8.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured; such liability policy to also contain a cross-liability clause, non-owned automobile liability and products and completed operations cover, to remain in place at all times during the performance of the Work;
 - (b) if required, automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00), to remain in place at all times during the performance of the Work;
 - (c) Professional errors and omissions insurance in an amount not less than \$250,000 per claim subject to a minimum \$250,000 aggregate and is to remain in place at all times during the performance of the Services.
- D8.2 Deductibles shall be borne by the Contractor.
- D8.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

- D8.4 The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.
- D8.5 The City shall have the right to alter the limits and/or coverages as reasonably required from time to time during the continuance of this agreement.

D9. SUBCONTRACTOR LIST

- D9.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site.

SCHEDULE OF WORK

D10. COMMENCEMENT

- D10.1 The Contractor shall not commence any Work until he is in receipt of a notice of award from the City authorizing the commencement of the Work.
- D10.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D7;
 - (ii) evidence of the workers compensation coverage specified in C6.14;
 - (iii) evidence of the insurance specified in D8;
 - (iv) the Subcontractor list specified in D9; and
 - (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

CONTROL OF WORK

D11. JOB MEETINGS

- D11.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D11.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D12. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D12.1 Further to C6.23, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D13. SAFETY

- D13.1 The Contractor shall be solely responsible for safety at the Site and for compliance with all laws, rules, regulations and practices required by the applicable safety legislation.
- D13.2 The Contractor shall be solely responsible for securing the Site, and any existing facility thereon, and for the proper care and protection of the Work already performed.

- D13.3 The Contractor shall do whatever is necessary to ensure that:
- (a) no person, property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities in performing the Work;
 - (b) the health and safety of all persons employed in the performance of the Work or otherwise is not endangered by the method or means of its performance;
 - (c) adequate medical services are available to all persons employed on the Work and at all times during the performance of the Work;

MEASUREMENT AND PAYMENT

D14. INVOICES

- D14.1 Further to C11, the Contractor shall submit an invoice for each order delivered to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: (204) 949-0864

Email: CityWpgAP@winnipeg.ca

- D14.2 Invoices must clearly indicate, as a minimum:

- (a) the City's purchase order number;
- (b) date of delivery;
- (c) delivery address;
- (d) type and quantity of goods delivered;
- (e) the amount payable with GST and MRST shown as separate amounts; and
- (f) the Contractor's GST registration number.

- D14.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

- D14.4 Bids Submissions must be submitted to the address in B7.8

D15. PAYMENT

- D15.1 Further to C11, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D16. PAYMENT SCHEDULE

- D16.1 Further to C11, a payment schedule consisting of the following payment milestones and consisting of four (4) equal payments shall be used:

- (a) Project start up;
- (b) Completion of the design phase;
- (c) Completion of the development and testing of the system;
- (d) Final acceptance of the system.

- D16.1 Further to C11, payment shall be in Canadian funds net thirty (30) Calendar Days after receipt and approval of the Contractor's invoice.

WARRANTY

D17. WARRANTY

D17.1 Warranty is as stated in C12.

D17.1 Notwithstanding C12, the warranty period shall begin on the date of Total Performance and shall expire three (3) months thereafter unless extended pursuant to C12.3, in which case it shall expire when provided for thereunder.

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS

E1.1 The Bidder shall design, develop, implement, maintain and operate the Water and Waste Department's Water Billing customer access website.

E2. WEB SITE DESIGN

E2.1 General design specifications

- (a) The Water and Waste Department requires a web design for a departmental website to support access by the Department's customers to view and update information related to their water billing. The Water and Waste Department has approximately 200,000 customers that currently receive a quarterly printed bill, mailed directly to the customer's address. Every customer's bill and ongoing billing history will be required to be stored on the website. The number of customers that may actually opt to use the website is unknown.
- (b) The Contractor will work in collaboration with Water and Waste Department staff during the design of the website. Department staff will need to be included in the design process to fully define all of the specifications, by providing recommendations and evaluations of content, features, navigation methods and design quality. A summary customer and administrative requirements list has been provided below. This list is not intended to be inclusive; it is provided so that Bidders will be better able to judge the overall scope of the system and be able to provide estimates with respect to the time and effort required to complete the requirements for the design and development of the system.
- (c) The web pages will conform to the "look and feel" and technical guidelines that govern the City of Winnipeg's internet site. The Contractor selected will comply with City standards, as defined in accompanying documents:
 - (i) CityofWinnipegWebStandards.doc (Appendix B)
 - (ii) UDaccessibilityWeb.pdf (Appendix C)
 - (iii) UniversalDesignPolicy.pdf (Appendix D)
 - (iv) eStyleGuide.pdf (Appendix E)
- (d) Information on detailed customer billing data will be provided regularly (Monday to Friday) and on an as required basis as a download to the website, utilizing separate files for each unique information type. One will contain an extract of detail billing information to be added to the website (sample attached). The second will be a file of printed bills in PDF format, including an account number index (format to be determined during design phase). On an as required basis a third file will contain general notifications and bulletin information applicable to all customers (format to be determined during design phase). Customer-entered meter readings and administrative reports will be extracted daily (Monday to Friday) (format to be determined during the design phase).
 - (i) Appendix A contains sample specifications for detail billing information downloads.

E2.2 The Bidder's design process to meet the water billing customer and administrative requirements of the system will be evaluated and used as a component of the overall selection of the Bid. Water Billing Customer, Administrative and General Design requirements are identified in FORM N (tables WATER BILLING CUSTOMER REQUIREMENTS, ADMINISTRATIVE REQUIREMENTS and GENERAL DESIGN REQUIREMENTS). These are not meant to be inclusive, and are provided as an indication of scope so that Bidders will be better able to estimate for the design phase. It is expected that Bidders will propose a design process that will include departmental staff to develop a detailed set of requirements that fully describe the system.

E2.3 Bidders are required to respond to the requirements identified in FORM N (tables WATER BILLING CUSTOMER REQUIREMENTS, ADMINISTRATIVE REQUIREMENTS and GENERAL DESIGN REQUIREMENTS).

E3. WEB DEVELOPMENT (INCLUDES DEVELOPMENT, TESTING, TRAINING, IMPLEMENTATION AND DOCUMENTATION)

E3.1 Web Development techniques and tools will be evaluated and will be used as criteria for the selection of the Bid.

E3.2 Bidders are required to respond to the requirements identified in FORM N (table WEB DEVELOPMENT).

E4. WEBSITE OPERATION

E4.1 Bidders are required to define how they would provide and operate the production website for the Water and Waste Department. Operations of the system must include the following services and be based on a one year optionally renewable service agreement.

- (a) Provision and ongoing maintenance of the environment necessary to operate the website in accordance with the performance requirements defined in E4.2.
- (b) Provision of daily operational tasks required to upload new data provided by the department, download information to department, run and distribute defined reports produced by the system.
- (c) Provision of operational recovery tasks required for all failure conditions of the website in accordance with performance requirements defined in E4.2.

E4.2 The City's expectation for availability is 99.99% 24 hours per day 7 days per week with an average performance (response time) of less than one second. Availability requirements include only customer and administrative access, and do not include any downtime for pre-planned maintenance. Availability and performance will be measured at the server. A reduction of 10% of the monthly service fees will be applied for each percentage point below the above defined expectations for any days during a monthly period to a maximum of 50%

E4.3 Bidders must comply with the City's data and confidentiality requirements as outlined below:

- (a) While this Agreement is in effect and at all times thereafter, the parties agree to:
 - (i) treat as confidential all personal information as that term is defined in The Freedom of Information and Protection of Privacy Act (Manitoba) and all information, data, documents and materials acquired in confidence or to which access has been given in confidence, or incidental to, the performance of this Agreement;
 - (ii) take all measures reasonably necessary for the protection of the personal information and the confidential information; and,
 - (iii) ensure that the personal information and the confidential information is not accessed by third parties not specifically authorized by this Agreement;

E4.3.1 except such disclosure that is required to carrying out the terms of this Agreement or as required by law or a court order.

E4.4 Bidders are required to respond to the requirements identified in FORM N (table WEBSITE OPERATION).

Appendix A: File Layout Detail Bill Information

The following file layouts are included in this section:

- DOC1Gen Input – Sorted CC&B Bill Print Extract

DOC1 Generate Input – Sorted CC&B Bill Print Extract

Sortkey – All Records Types

All records in the CC&B Bill Print Extract contain a 196-byte sortkey; this sortkey begins in byte 5 of the record. Sorting the CC&B Bill Print Extract produces two results:

1. Intercepted Bills are sorted by Intercept Code
2. Records are re-arranged within a Bill to present the data to the DOC1 Bill Application in the sequence expected. Additionally, Service Agreements are re-sequenced according to print priorities defined within CIS.

Field Description	Start Pos.	Field Length	Data Type	Comments
Intercept Code	5	8	String	
Bill ID	13	12	String	
Sequence Number	25	2	Integer	
Copy Number	27	1	Integer	
Bill Record Group	28	2	String	“10” Bill Record “20” Current Charge Detail “30” Payment Detail “40” Bill Message Detail “50” Bill End
Filler	30	2		
Premise State	30	6	String	
Premise City	36	30	String	
Premise Address 1	66	64	String	
Premise ID	130	10	String	
Premise Record Group	140	2	String	“10” Premise Record “15” SA Level Cancel Record “20” SA Level Record “30” Premise End Record
SA Print Order Priority	142	2	String	
SA ID	144	10	String	
SA Record Group	154	2	String	“10” SA Detail “20” Histogram Detail “30” Current Charge “40” Adjustment Detail “50” SA End

Field Description	Start Pos.	Field Length	Data Type	Comments
Bill Segment End Date	156	10	Date	YYYY-MM-DD
Bill Segment ID	166	12	String	
Bill Segment Group	178	2	String	“10” Detail “20” Calc Group “30” Read Detail “40” Service Quantity “50” Item Detail “60” End
Bill Calc Header Sequence	180	2	Integer	
Bill Calc Header Group	182	2	String	“10” – Calc Header “20” – Calc Line “30” – End
Line Sequence	184	3	String	
Filler	187	65	String	Used by ‘Premise-related’ records
Post Code	252	12	String	

0010 – File Header Record

This record only occurs once in the file and is the first record of the file (after the sort prior to DOC1 Generate is executed). The global information includes system time of extraction, batch number, batch code, etc.

Record Attributes

- Start of Document
- Occurs once per file
- First record of file
- Record key = “0010”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value of "0010"
Sortkey	5	170	String	See prior definition
0010-Batch-Code	175	8	String	
0010-Batch-Number	183	10	Integer	
0010-Batch-Rerun-Number	193	10	Integer	
0010-Bill-Count	203	10	Integer	
0010-Extract-Date	213	10	Date	
0010-Extract-Time	223	16	String	
0010-Start-Bill-ID	239	10	String	
0010-End-Bill-ID	249	10	String	
0010-Thread-Number	259	10	Integer	
0010-Thread-Count	269	10	Integer	

0100 – Start of Bill Record

The Start of Bill Record indicates the beginning of the group of records comprising a Bill. The Start of Bill Record is paired with a 9999 – End of Bill Record. This record contains information global to the entire Bill including customer information such as name, address, account number and account information such as previous balance, total payments received, past-due balance, current balance, billing date, and due date.

Record Attributes

- Start of Document
- Occurs once per Bill
- Record key = “0100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0100”
Sortkey	5	199	String	See prior definition
0100-Bill-ID	204	12	String	
0100-Account-Num	216	10	String	
0100-Check-Digit	217	1	String	
0100-Case-Nbr	218	254	String	
0100-Trustee-NBR	472	254	String	
0100-Bill-Date	726	10	Date	YYYY-MM-DD
0100-Due-Date	736	10	Date	YYYY-MM-DD
0100-Copy-Number	737	1	Integer	
0100-Number-Copies	738	1	Integer	
0100-Intercept-ID	739	8	String	
0100-Bill-Format-Flag	747	2	String	
0100-Reprint-SW	749	1	String	
0100-Cash-Only-SW	750	1	String	Cash only switch
0100-Current-Balance	751	16	Decimal	13.2
0100-Current-Charges	767	16	Decimal	13.2
0100-Current-Corrections	783	16	Decimal	13.2
0100-Current-Adjustments	799	16	Decimal	13.2
0100-Current-Payments	815	16	Decimal	13.2
0100-Current-Previous-Balance	831	16	Decimal	13.2

0100-Total-Balance	847	16	Decimal	13.2
0100-Total-Charges	863	16	Decimal	13.2
0100-Total-Corrections	879	16	Decimal	13.2
0100-Total-Adjustments	895	16	Decimal	13.2
0100-Total-Payments	911	16	Decimal	13.2
0100-Total-Previous-Balance	927	16	Decimal	13.2
0100-Currency-Code	943	3	String	
0100-Delinquent-Amount	946	16	Decimal	13.2
0100-Customer-PO-ID	962	20	String	
0100-Account-Entity-Name	982	64	String	
0100-Entity-Name	1046	64	String	
0100-Address-SBR	1110	361	String	CAN
0100-Final-Bill-SW	1471	1	String	
0100-Sched-Extract-DT	1472	10	Date	
0100-Entity-Name1	1482	64	String	
0100- Entity-Name2	1546	64	String	
0100- Entity-Name3	1610	64	String	
0100-Acct-Cur-Symbol	1674	4	String	
0100-Bill-Language	1678	3	String	

0300 – Current Charge Record

The Current Charge Record indicates the type of charge and the amount of the charge for the billing period. This record may occur multiple times within a Bill Record Group. Each occurrence of this record causes a Current Charge detail line produced in the Account Summary – with the exceptions noted in the Document Behavior section of this document. If there are no Current Charges for the billing period, the Bill Record Group will not contain any Current Charge Records and there will be no Current Charge detail lines produced in the Account Summary section of the Bill.

Record Attributes

Non-Compulsory / Single Iterated Key – included for a Bill only when Current Charges are present

May occur multiple times within a Bill

Record key = “0300”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0300”
Sortkey	5	199	String	See prior definition
0300-Debt-Class-Code	204	4	String	
0300-Debt-Class-Desc	208	30	String	
0300-Current-Charge-Amt	238	16	Decimal	13.2
0300-Total-Charge-Amt	258	16	Decimal	13.2

0600 – Payment Record

The Payment Record contains the Payment details for each Payment received during the billing period. The payment date and amount printed are taken from this record.

None of the information contained in this record is printed by the DOC1 Bill Application.

Record Attributes

Non-Compulsory / Single Iterated Key – included for a Bill only when Payments are present

May occur multiple times within a Bill

Record key = “0600”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0600”
Sortkey	5	199	String	See prior definition
0600-FT-Type	204	2	String	
0600-Payment-Date	206	10	Date	YYYY-MM-DD
0600-Cancel-Reason-Code	216	4	String	
0600-Cancel-Reason-Desc	220	30	String	
0600-Current-Payment-Amt	250	16	Decimal	13.2
0600-Total-Payment-Amt	266	16	Decimal	13.2

0700 – Deposit Record

The Deposit Record contains the Deposit details for each type of Deposit on account. The deposit type and amount printed are taken from this record. This record is produced once per Deposit and each occurrence of the record causes a Deposit detail line produced after the services detailed. If no Deposits are present for the account, the Bill Record Group will not contain a Deposit Record and no Deposit detail lines will be produced in the Bill.

Record Attributes

Non-Compulsory / Single Iterated Key – included for a Bill only when Deposits are present for an account

May occur multiple times within a Bill

Record key = “0700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0700”
Sortkey	5	199	String	See prior definition
0700-Deposit-Class-Code	204	8	String	
0700-Deposit-Class-Description	212	30	Date	YYYY-MM-DD
0700-Deposit-Amount-On-Hand	242	16	Decimal	13.2

0900- Start of Premise Record

The Start of Premise Record denotes the beginning of a group of services provided for a particular location. For each Start of Premise Record, a corresponding 3700 – End of Premise record must be present within the bill record group; typically, a series of different record types detailing the service provided is found between the Start of Premise and End of Premise records. The Start of Premise/End of Premise group of records may be repeated within the Bill Record Group, once per location. This record contains information such as premise id and premise (service) address. In situations such as a Final Bill showing only a payment, the Start of Premise/End of Premise group may be omitted.

Record Attributes

Non-Compulsory / End Range Iteration – if the Bill contains no Premises, then the 0900/3700 Premise range iteration is not included in the Bill

May occur multiple times within in the Bill – there is a one-to-one correlation with the 3700 record; for each 3700 present in the Bill, a 0900 is required – will occur once per service at a premise

Record key = “0900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “0900”
Sortkey	5	199	String	See prior definition
0900-Non-Premise-SW	204	1	String	
0900-Premise-ID	205	10	String	
0900-Address-SBR	215	361	String	
0900-Prem-Description	576	254	String	
0900-Current-Charge-Amt	730	16	Decimal	
0900-Current-Cancel-Amt	746	16	String	
0900-Total-Charge-Amt	762	16	String	
0900-Total-Cancel-Amt	778	16	String	

1100 – Start of Service Agreement Record

The Start of Service Agreement Record denotes the beginning of a Service provided and the details of that Service. For each Start of Service Agreement Record, a corresponding 3600 – End of Service Agreement record must be present; typically, a series of different record types subordinate to the Service Agreement is found between the Start of Service Agreement and End of Service Agreement records. The Start of Service Agreement / End of Service Agreement group of records may be repeated, once per Service provided per location. This record contains information such as service type code, service description, business unit, customer read flag, etc.

Record Attributes

Non-Compulsory / End Range Iteration – if the Premise contains no Service Agreements, then the 1100/3600 Service Agreement range iteration is not included within the 0900/3700 Premise range iteration

May occur multiple times within the 0900/3700 Premise range iteration – there is a one-to-one correlation with the 3600 record; for each 3600 present in the Bill, a 1100 is required – will occur once per service at a premise

Record key = “1100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1100”
Sortkey	5	199	String	See prior definition
1100-SA-ID	204	10	String	
1100-Old-Account-Number	214	15	String	
1100-Customer-Read-Flag	229	2	String	
1100-SIC-ID	231	4	String	
1100-SIC-Desc	235	30	String	
1100-Business-Unit	265	10	String	
1100-Service-Type-Code	275	8	String	
1100-Service-Type-Desc	283	30	String	
1100-Service-Type-Default-Desc	313	80	String	
1100-Service-Type-Default-Desc-CR2	393	80	String	
1100-SVC-Type-Code	473	2	String	
1100-SVC-Type-Desc	475	30	String	
1100-Rev-CL-Code	505	8	String	
1100-Char-Prem-ID	513	10	String	
1100-Rel-ID	523	10	String	

Field Name	Start Pos.	Field Length	Data Type	Comments
1100-Rel-Type-Code	533	8	String	
1100-Rel-Type-Description	541	30	String	
1100-SPR-Code	571	12	String	
1100-SPR-Description	583	50	String	
1100-SPR-Entity-Name	633	64	String	

1300 – Start of Bill Segment Record

The Start of Bill Segment Record denotes the beginning of the combination of Bill Calculation Information and Service Reading Information. For each Start of Bill Segment Record, a corresponding 2900 – End of Bill Segment Record must be present; within the Start of Bill Segment / End of Bill Segment pair, subordinate record groups will be present for Bill Calculation and for Service Reading.

Record Attributes

Non-Compulsory / End Range Iteration – if the Service Agreement contains no Segments, then the 1300/2900 Bill Segment range iteration is not included.

May occur multiple times within the 1100/3600 Service Agreement range iteration – there is a one-to-one correlation with the 2900 record; for each 2900 present in the Bill, a 1300 is required.

Record key = “1300”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1300”
Sortkey	5	199	String	See prior definition
1300-Start-Date	204	10	Date	YYYY-MM-DD
1300-End-Date	214	10	Date	YYYY-MM-DD
1300-Closing-Bill-Seg-SW	224	1	String	
1300-Estimate-SW	225	1	String	
1300-Bill-Cycle-Code	226	4	String	
1300-SQ-Override-SW	230	1	String	
1300-Item-Overview-SW	231	1	String	
1300-Bill-Seg-Stat-Flag	232	2	String	
1300-Cancel-Reason-Code	234	4	String	
1300-Cancel-Reason-Desc	238	30	String	
1300-Current-Amt	268	16	Decimal	13.2
1300-Total-Amt	284	16	Decimal	13.2
1300-BOD-Date	300	10	Date	YYYY-MM-DD
1300-BOD-Value	310	60	String`	
1300-Nitrogen-Date	370	10	Date	YYYY-MM-DD
1300-Nitrogen-Value	380	60	String	
1300-Phosphorous-Date	440	10	Date	YYYY-MM-DD
1300-Phosphorous-Value	450	60	String	
1300-TSS-Date	510	10	Date	YYYY-MM-DD
1300-TSS-Value	520	60	String	

1500 – Start of Bill Calc Record

The Start of Bill Calc Record denotes the beginning of the detailed charges comprising a service. For each Start of Bill Calc Record, a corresponding 1900 – End of-Bill Calc Record must be present; within the Start of Bill Calc / End of Bill Calc pair, subordinate 1700 – Bill Calc Detail Records may be present. The Start of Bill Calc Record contains the total amount of charge calculated for the bill segment; start date, end date, and description are present.

Record Attributes

Non-Compulsory / Begin Range Iteration – if the Bill Segment contains no Bill Calc, then the 1500/1900 Bill Calc range iteration is not included.

May occur multiple times within the Bill Segment 1300/2900 range iteration – there is a one-to-one correlation with the 1900 record; for each 1900 present in the Bill, a 1500 is required.

Record key = “1500”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1500”
Sortkey	5	199	String	See prior definition
1500-Start-Date	204	10	Date	YYYY-MM-DD
1500-End-Date	214	10	Date	YYYY-MM-DD
1500-Set-ID	224	10	String	
1500-Read-Schedule-Code	234	8	String	
1500-Calc-Amt	242	16	Decimal	13.2
1500-Desc-on-Bill	258	80	String	

1700 – Bill Calc Detail Record

The Bill Calc Detail Record contains details for the items comprising the charge for a Bill Calc group. This record contains a description and amount that are printed within the Service Agreement. This record is produced once per line item and each record causes a detail line produced in the Service Agreement; typically, several Bill Calc Detail Records are produced within each Bill Calc Group.

Record Attributes

Non-Compulsory / Single Iterated Key – included for a Bill Calc range iteration only when Bill Calc Detail is present for that service

May occur multiple times within each instance of the 1500/ 1900 Bill Calc range iteration – example is when multiple Bill Calc Detail lines are to be printed

Record key = “1700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1700”
Sortkey	5	199	String	See prior definition
1700-App-In-Summ-SW	204	1	String	
1700-Bill-Calc-Amt	205	16	Decimal	13.2
1700-Exempt-Amt	221	16	Decimal	13.2
1700-UOM-Code	237	4	String	
1700-TOU-Code	241	8	String	
1700-SQI-Code	249	8	String	
1700-Bill-SQ	257	19	Decimal	12.6
1700-Bill-Calc-Desc	276	80	String	
1700-Bill-Calc-Desc-2	356	80	String	

1900 – End of Bill Calc Record

Paired with the 1500 – Start of Bill Calc Record, the End of Bill Calc Record signals the end of the Bill Calculation detail.

Record Attributes

Non-Compulsory / End Range Iteration – if the Bill contains no Bill Calc, then the 1500/1900 Bill Calc range iteration is not included.

May occur multiple times – there is a one-to-one correlation with the 1500 record; for each 1500 present in the Bill, a 1900 is required.

Record key = “1900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “1900”
Sortkey	5	199	String	See prior definition

2100 – Service Reading Record

The Service Reading Record contains consumption details such as the prior reading and current reading, an indicator that the reading was estimated, the prior read date and current read date, a multiplier factor, units of measure, and time-of-use from the reading of a meter device. The Service Reading Record may be present multiple times within a Bill Segment group – each instance causes a detail line to be printed. There will be multiple Service Reading Records if multiple meters are used for the service, if there are multiple time-of-use values for the reading (i.e., off-peak vs. peak consumption), or if a meter change occurred. Service Reading Records may be omitted within a Bill Segment group for non-metered services such as Garbage Disposal, Payment Arrangements or Fire Protection.

Record Attributes

Non-Compulsory / Single Iterated Key – will be omitted from a Bill Segment when the service is non-metered

May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration – examples would be a meter change during a billing period or multiple meters for a service

Record key = “2100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2100”
Sortkey	5	199	String	See prior definition
2100-SP-ID	204	10	String	
2100-Badge-Number	214	16	String	
2100-UOM-Code	230	4	String	
2100-TOU-Code	234	8	String	
2100-Reading-Dec-Pos	242	1	Integer	Number of Decimal Pos to Print in Start/End Read Qty
2100-Start-Read-Qty	243	16	Decimal	9.6
2100-Start-Read-Date	259	10	Date	YYYY-MM-DD
2100-Start-Read-Est-SW	285	1	String	
2100-End-Read-Qty	286	16	Decimal	9.6
2100-End-Read-Date	302	10	Date	YYYY-MM-DD
2100-End-Read-Est-SW	328	1	String	
2100-Msr-Qty	329	19	Decimal	12.6
2100-Usage-Flag	348	2	String	
2100-Use-Percent	350	3	String	
2100-How-To-Use-Flag	353	2	String	
2100-Consumer-Sub-Flag	355	2	String	

Field Name	Start Pos.	Field Length	Data Type	Comments
2100-Mst-Peak-Quantity-SW	357	1	String	
2100-Reg-Constant	358	13	Decimal	6.6
2100-Qty-Dec-Pos	371	1	Integer	Number of Decimal Pos to Print in Final Reg Qty
2100-Final-UOM	372	4	String	
2100-Final-TOU	376	8	String	
2100-Final-Reg-Qty	384	19	Decimal	12.6
2100-Tap-Size	403	16	String	
2100-Number-of-Days	419	3	Integer	

2400 – Service Quantity Record

The Service Quantity Record contains information such as unit-of-measure code, time-of-use code, SQI code, SQ dec pos, and bill SQ.

None of the information contained in this record is printed by the DOC1 Bill Application.

Record Attributes

Non-Compulsory

The data on this record is not used in the DOC1 Bill Application

May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration

Record key = “2400”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2400”
Sortkey	5	199	String	See prior definition
2400-UOM-Code	204	4	String	
2400-TOU-Code	208	8	String	
2400-SQI-Code	216	8	String	
2400-SQ-Dec-Pos	224	1	Integer	
2400-Bill-SQ	225	19	Decimal	12.6

2700 – Item Detail Record

The Item Detail Record contains information for a Bill Segment item. Information such as the start date, end date, item count, and the item description is contained in this record.

None of the information contained in this record is printed by the DOC1 Bill Application.

Record Attributes

Non-Compulsory

The data on this record is not used in the DOC1 Bill Application

May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration

Record key = “2700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2700”
Sortkey	5	199	String	See prior definition
2700-Start-Date	204	10	Date	YYYY-MM-DD
2700-End-Date	214	10	Date	YYYY-MM-DD
2700-Item-Number	224	12	Decimal	9.2
2700-Item-Type	236	30	String	

2900 – End of Bill Segment Record

Paired with the 1300 – Start of Bill Segment Record, the End of Bill Segment Record signals the end of the Bill Calculation and Service Reading.

Record Attributes

Non-Compulsory / End Range Iteration – if the Bill contains no Segments, then the 1300/2900 Bill Segment range iteration is not included.

May occur multiple times – there is a one-to-one correlation with the 1300 record; for each 1300 present in the Bill, a 2900 is required.

Record key = “2900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “2900”
Sortkey	5	199	String	See prior definition

3100 – Histogram Record

The Histogram Record contains historical consumptive data which is used for the creation of a bar chart on the statement. The record may contain up to 13 periods of consumptive data. While multiple Histogram Records may be present within a Service Agreement group, only one bar chart is produced which reflects the information from the last Histogram Record.

Record Attributes

Non-Compulsory / Single Iterated Key – included for a Bill Segment range iteration only when a Histogram chart is to be printed for a Bill Segment

May occur multiple times within each instance of the 1300/ 2900 Bill Segment range iteration – however, only the data from the last instance will be printed

Record key = “3100”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3100”
Sortkey	5	199	String	See prior definition
3100-UOM-Code	204	4	String	
3100-TOU-Code	208	8	String	
3100-SQI-Code	216	8	String	
3100-SQI-Dec-Pos	224	1	Integer	
3100-Num-Periods	225	2	Integer	Number of History Periods Present
3100-Chart-Max	227	19	Decimal	12.6
3100-Curr-Read-Date	246	10	Date	YYYY-MM-DD
3100-Curr-Read-Amt	256	19	Decimal	12.6
3100-Curr-01-Read-Date	275	10	Date	YYYY-MM-DD
3100-Curr-01-Read-Amt	285	19	Decimal	12.6
3100-Curr-02-Read-Date	304	10	Date	YYYY-MM-DD
3100-Curr-02-Read-Amt	314	19	Decimal	12.6
3100-Curr-03-Read-Date	333	10	Date	YYYY-MM-DD
3100-Curr-03-Read-Amt	343	19	Decimal	12.6
3100-Curr-04-Read-Date	362	10	Date	YYYY-MM-DD
3100-Curr-04-Read-Amt	372	19	Decimal	12.6
3100-Curr-05-Read-Date	391	10	Date	YYYY-MM-DD
3100-Curr-05-Read-Amt	401	19	Decimal	12.6
3100-Curr-06-Read-Date	420	10	Date	YYYY-MM-DD

Field Name	Start Pos.	Field Length	Data Type	Comments
3100-Curr-06-Read-Amt	430	19	Decimal	12.6
3100-Curr-07-Read-Date	449	10	Date	YYYY-MM-DD
3100-Curr-07-Read-Amt	459	19	Decimal	12.6
3100-Curr-08-Read-Date	478	10	Date	YYYY-MM-DD
3100-Curr-08-Read-Amt	488	19	Decimal	12.6
3100-Curr-09-Read-Date	507	10	Date	YYYY-MM-DD
3100-Curr-09-Read-Amt	517	19	Decimal	12.6
3100-Curr-10-Read-Date	536	10	Date	YYYY-MM-DD
3100-Curr-10-Read-Amt	546	19	Decimal	12.6
3100-Curr-11-Read-Date	565	10	Date	YYYY-MM-DD
3100-Curr-11-Read-Amt	575	19	Decimal	12.6
3100-Curr-12-Read-Date	594	10	Date	YYYY-MM-DD
3100-Curr-12-Read-Amt	604	19	Decimal	12.6

3400 – Adjustment Record

The Adjustment Detail Record contains information regarding any Adjustment made to a Service. Information such as adjustment date, adjustment type code, adjustment description, and total adjustment amount are included in this record. The Adjustment Record may be present multiple times within a Service Agreement group – each instance results in an Adjustment detail line being printed in the Service Agreement.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Service Agreement only when Adjustments are present for that service
- May be present when a Service Agreement has no Bill Segment (1300/2900)
- May occur multiple times within each instance of the 1100/ 3600 Service Agreement range iteration – examples would be multiple Adjustments for a service
- Record key = “3400”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3400”
Sortkey	5	199	String	See prior definition
3400-Adj-Date	204	10	Date	YYYY-MM-DD
3400-FT-Type	214	2	String	
3400-Current-Amt	216	16	Decimal	13.2
3400-Total-Amt	232	16	Decimal	13.2
3400-Adj-Type-Code	248	8	String	
3400-Adj-Type-Desc	256	30	String	
3400-Desc-On-Bill	286	80	String	
3400-Desc-On-Bill-2	366	80	String	
3400-Cancel-Reason-Code	446	4	String	
3400-Cancel-Reason-Desc	450	30	String	

3420 – Adjustment Calc line Record

The Adjustment Calc line Record contains information regarding any Adjustment Calculations made to a Service. Information such as adjustment date, adjustment type code, adjustment description, and total adjustment amount are included in this record. The Adjustment Record may be present multiple times within a Service Agreement group – each instance results in an Adjustment detail line being printed in the Service Agreement.

Record Attributes

- Non-Compulsory / Single Iterated Key – included for a Service Agreement only when Adjustments are present for that service
- May be present when a Service Agreement has no Bill Segment (1300/2900)
- May occur multiple times within each instance of the 1100/ 3600 Service Agreement range iteration – examples would be multiple Adjustments for a service
- Record key = “3420”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3400”
Sortkey	5	199	String	See prior definition
3420-LN-Type	204	30	Date	YYYY-MM-DD
3420-App-In-Summ-SW	234	1	String	
3420-Calc-Amt	235	16	Decimal	13.2
3420-Exempt-Amt	235	16	Decimal	13.2
3420-UOM-CD	251	4	String	
3420-UOM-UD	255	8	String	
3420-SQI-CD	263	8	String	
3420-Bill-SQ	271	19	Decimal	
3420-Desc-On-Bill	290	80	String	
3420-Desc-On-Bill-2	370	80	String	

3440 – End of Adjustment Record

Paired with the 3440 – End of Adjustment Record, the End of Service Agreement Record signals the end of details for a service.

Record Attributes

- Non-Compulsory / End Range Iteration – if the Bill contains no Service Agreements, then the 1100Service Agreement range iteration is not included.
- May occur multiple times – there is a one-to-one correlation with the 3400 record; for each 3400 present in the Bill, a 3440 is required.
- Record key = “3440”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3420”
Sortkey	5	199	String	See prior definition

3620 – Other Charges Summary Record

The Other Charges Summary Record contains Summary Charges produced by the CC&B system.

Record Attributes

- Non-Compulsory / Single Iterated Key
- May occur multiple times within a Bill
- Record key = “3620”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3620”
Sortkey	5	199	String	See prior definition
3620-Line-Type	204	30	String	
3620-Calc-Amt	234	16	Decimal	\$13.2
3620-Desc-On-Bill	250	80	String	
3620-Desc-On-Bill-2	370	80	String	

3640 – Premise Read Record

The Premise Read Record denotes the beginning of a Service provided and the details of that Service. For each Start of Service Agreement Record, a corresponding 3600 – End of Service Agreement record must be present; typically, a series of different record types subordinate to the Service Agreement is found between the Start of Service Agreement and End of Service Agreement records. The Start of Service Agreement / End of Service Agreement group of records may be repeated, once per Service provided per location. This record contains information such as service type code, service description, business unit, customer read flag, etc.

Record Attributes

- Non-Compulsory / End Range Iteration –
- May occur multiple times within the 0900/3700 Premise range iteration – there is a one-to-one correlation with the 3600 record; for each 3600 present in the Bill, a 1100 is required – will occur once per service at a premise
- Record key = “3640”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3640”
Sortkey	5	199	String	See prior definition
3640-SP-ID	204	10	String	
3640-Badge-Number	214	16	String	
3640-UOM-CD	230	4	String	
3640-TOU-CD	234	8	String	
3640-Register-Decimal-Postion	242	1	Integer	
3640-Starting-Register-Reading	243	16	Decimal	S9.6
3640-Start-Read-Date?	259	10	Date	YYYY-MM-DD
3640-Start-Estimate-SW	269	1	String	
3640-End-Reg-Reading	270	16	Decimal	S9.6
3640-End-Read-Date	286	10	Date	YYYY-MM-DD
3640-End-Estimate-SW	296	1	String	
3640-MSR-QTY	297	19	Decimal	S12.6
3640-Usage-FLaG	316	2	String	
3640-Use-PCT	318	3	Integer	
3640-How-To-Use-Flag	321	2	String	

Field Name	Start Pos.	Field Length	Data Type	Comments
3640-Consumtion-Sub-Flag	323	2	String	
3640-MSR-Peak-QTY-SW	325	1	String	
3640-Register-CONST	326	13	Decimal	S6.6
3640-QTY-DEC-POS	339	1	Integer	
3640-Final-UOM	340	4	String	
3640-Final-TOU	344	8	String	
3640-Final-Reg-QTY	352	19	Decimal	S12.6
3460-SQI-CD	371	8	String	
3640-Final-SQI-CD	379	8	String	
3640-Bill-Read-Type	387	20	String	
3640-SP-Descriptor	407	254	String	
3640-SP-Descriptor-2	661	254	String	
3640-MTR-Size	915	16	String	
3640-Days	931	4	Integer	
3640-Usage	935	19	Decimal	S12.6
3640-Conv-Factor	954	11	Decimal	S5.5

3600 – End of Service Agreement Record

Paired with the 1100 – Start of Service Agreement Record, the End of Service Agreement Record signals the end of details for a service.

Record Attributes

Non-Compulsory / End Range Iteration – if the Bill contains no Service Agreements, then the 1100/3600 Service Agreement range iteration is not included.

May occur multiple times – there is a one-to-one correlation with the 1100 record; for each 1100 present in the Bill, a 3600 is required.

Record key = “3600”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3600”
Sortkey	5	199	String	See prior definition

3700 – End of Premise Record

Paired with the 0900 – Start of Premise Record, the End of Premise Record signals the end of services associated with a particular location.

Record Attributes

Non-Compulsory – if the Bill contains no Premises (and therefore, no services), then the 0900/3700 Premise range iteration is not included.

May occur multiple times – there is a one-to-one correlation with the 0900 record; for each 0900 present in the Bill, a 3700 is required.

Record key = “3700”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3700”
Sortkey	5	199	String	See prior definition

3900 – Message Record

The Message Record contains message text produced by the CC&B system. Multiple Message Records may be produced. Each Bill Message Record will translate into one message in the Messages section of the Bill – with the exceptions noted in the Document Behavior section of this document. If no messages are present, then the Message section is not produced but left blank.

Record Attributes

Non-Compulsory / Single Iterated Key – included for a Bill only when a Message is to be printed

May occur multiple times within a Bill

Record key = “3900”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “3900”
Sortkey	5	199	String	See prior definition
3900-Message-Code	204	4	String	
3900-Message-Priority	208	2	String	
3900-Insert-Code	210	8	String	
3900-Message-Text	218	254	String	
3900-Message-Parm-Value-1	472	30	String	
3900-Message-Parm-Value-2	502	30	String	
3900-Message-Parm-Value-3	532	30	String	
3900-Message-Parm-Value-4	562	30	String	
3900-Message-Parm-Value-5	592	30	String	
3900-Message-Parm-Value-6	622	30	String	
3900-Message-Parm-Value-7	652	30	String	
3900-Message-Parm-Value-8	682	30	String	
3900-Message-Parm-Value-9	712	30	String	
3900-Message-Parm-Value-10	742	30	String	

9999- End of Bill

Paired with the 0100 – Start of Bill Record, the End of Bill Record signals the end of the records comprising a bill record group and thus the end of a Bill.

Record Attributes

Compulsory – required

Occurs once per Bill – last record for a Bill

Record key = “9999”

Field Name	Start Pos.	Field Length	Data Type	Comments
Record Key	1	4	String	Value “9999”
Sortkey	5	199	String	See prior definition

Record Hierarchy – Sorted CC&B Bill Print Extract

Record Key					Description of Record	Record Attributes
0010					File Header Record	Start-of-Document
0100					Start of Bill Record	Start-of-Document
	0300				Current Charge Record(s)	Non-Comp / Single Iterated
	0600				Payment Record(s)	Non-Comp / Single Iterated
	0700				Deposit Record(s)	Non-Comp / Single Iterated
	3900				Message Record(s)	Non-Comp / Single Iterated
	0900				Start of Premise Record	Non-Comp / Beg Range Iter
		1100			Start of Service Agreement Rec	Non-Comp / Beg Range Iter
			3100		Histogram Record(s)	Non-Comp / Single Iterated
			1300		Start of Bill Segment Record	Non-Comp / Beg Range Iter
				1500	Start of Bill Calc Record	Non-Comp / Beg Range Iter
				1700	Bill Calc Detail Record(s)	Non-Comp / Single Iterated
				1900	End of Bill Calc Record	Non-Comp / End Range Iter
				2100	Bill Segment Read Record(s)	Non-Comp / Single Iterated
				2400	Service Quantity Record(s)	Non-Comp / Single Iterated
				2700	Item Detail Record(s)	Non-Comp / Single Iterated

Record Key					Description of Record	Record Attributes
			2900		End of Bill Segment Record	Non-Comp / End Range Iter
			3400		Adjustment Record(s)	Non-Comp / Single Iterated
				3440	Adjustment Calc Line Record	
			3460		End of Adjustments	
		3600			End of Service Agreement Record	Non-Comp / End Range Iter
		3620			Other Charges Summary Record	
		3640			Premise Read Record	
	3700				End of Premise Record	Non-Comp / End Range Iter
9999						Compulsory

Appendix B



City of Winnipeg

Web Standards, Guidelines & Procedures

Last Update: July 30, 2010

Corporate Web Services
Corporate Support Services

CONTENTS

Section	Heading	Page
1.0	Overview and Updates	3
2.0	Winnipeg.ca and Subsites	3
3.0	City of Winnipeg Web Standards, Guidelines & Procedures for Internet sites	11
4.0	CityNet and Subsites	16
5.0	City of Winnipeg Web Standards, Guidelines & Procedures for Intranet Sites	20
6.0	Administrative & Legal Requirements for Internet and Intranet Sites	21
7.0	Other Guidelines & Recommendations for Internet and Intranet Sites	23

City of Winnipeg Web Standards, Guidelines & Procedures

1.0 – Overview and Updates

The City of Winnipeg Corporate Web Standards, Guidelines & Procedures document was originally produced in 2005 by the Corporate Web Manager at the request of the Web Publishers Committee. It was updated in 2010 by the Corporate Web Team.

This is a living document outlining the Strategy, Principles, Standards and Guidelines for the City of Winnipeg Internet (“Winnipeg.ca”, including winnipegassessment.com and winnipegtransit.com) and Intranet (“Citynet”) websites. The City of Winnipeg Web Governance Administrative Standard IT-005 supports this document. It contains roles and responsibilities regarding Web governance.

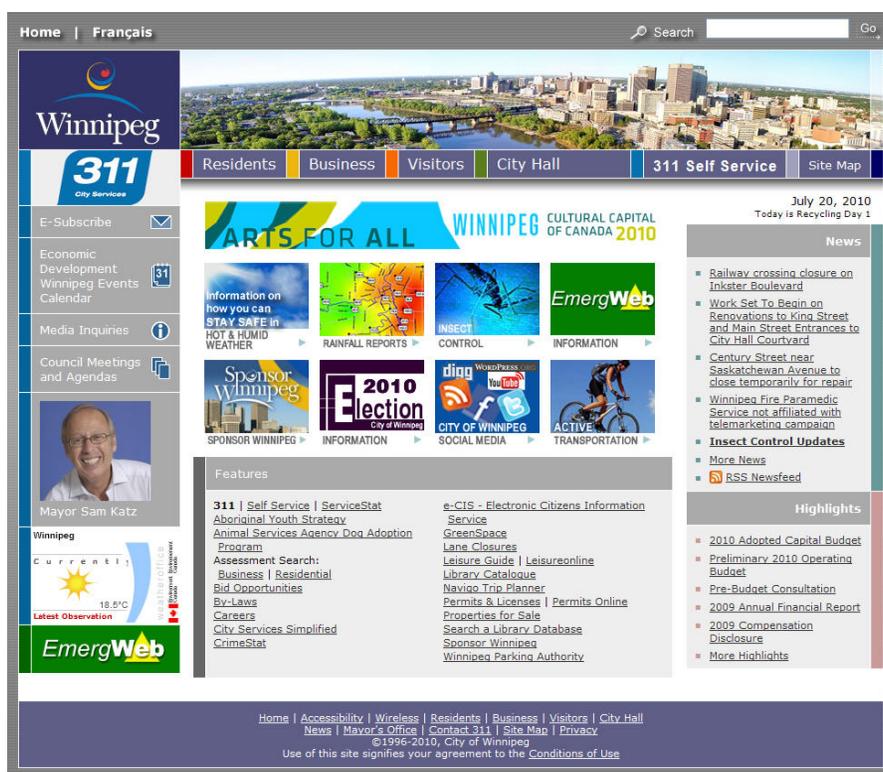
Dated updates, additions and amendments to this document will be posted on the Web Publishing section of CityNet. All City of Winnipeg staff producing, reviewing, developing and/or publishing content for Winnipeg.ca should read this document and use it as a guide to Web development in conjunction with, but not replacing, the [City of Winnipeg eStyle Guide](#).

2.0 – Winnipeg.ca and Internet sites

2.1 – 2008 Global website redesign

On September 3, 2008, Corporate Web Services launched the new look of Winnipeg.ca. A need was identified for Winnipeg.ca to reflect a service-based navigational structure, as the newly formed 311 Service would be using the website as its primary information source. The 311 and Corporate Web teams worked with every department and service area to review their subsites to ensure up-to-date and relevant information was provided to the citizens of Winnipeg.

A complete redesign of Winnipeg.ca, both aesthetic and technical, was done to improve the look and feel, make the content easier to use and navigate, and update the underlying code to support a CSS-based layout. All sites within Winnipeg.ca, winnipegassessment.com and winnipegtransit.com were updated to reflect the new look and feel.



The look of the new site was designed in-house by the Corporate Web Services team in consultation with the Web Publisher’s Committee. The HTML code and Cascading Style Sheets (CSS) were redeveloped with the assistance

of the Winnipeg Transit web team, changing the layout of all static pages from table-based to CSS-based. This will make future redesigns of Winnipeg.ca much easier. It also makes the website load more quickly, as there are far fewer lines of code the browsers need to render.

The majority of the technical implementation of the new design was done by the Corporate Web Services team to minimize the amount of changes the departments would be required to make.

Following consultation with the 311 Service and Corporate Communications, a service-based navigation menu with primary, secondary and tertiary dropdown menus was adopted. A focus group test was also done to ensure the new navigation was intuitive to users.

The following are the most significant visual, navigational and functional changes:

- **Navigation changed to be service-based** – The new Winnipeg.ca navigation is based on City services, making it easier for citizens to find the service they are looking for. It is also now located in one spot – in the header of every page.
- **More organized content on homepage** – The new Winnipeg.ca homepage has been redesigned and remains optimized for a 1024 x 768 screen resolution.
- **Highlighted Features** – Featured links are prominent on the homepage underneath the main navigation menu. New items have graphic button links while other popular links and services are featured in the text box underneath the buttons.
- **311 links** – A link to 311 contact information is located in the left sidebar of the header and can be found on every page on Winnipeg.ca. A link to 311 Self Service is also located in the main menu bar on the right hand side.

A brief visual archive of the City of Winnipeg Internet site can be found on the Winnipeg.ca [Help](#) pages.

2.2 – Corporate Web Framework Strategy for Winnipeg.ca

Winnipeg.ca is the gateway homepage and organizational name for all City of Winnipeg Internet sites that are accessible to the general public. The corporate homepage and guide pages, along with other pages and subsites, are managed by the Corporate Web Manager with the support of Corporate Web Services.

The Corporate Web Services team is responsible for the Winnipeg.ca corporate site.

The Winnipeg.ca strategy is to create a citizen-centred, service-oriented Web portal that promotes a consistent look and feel, but that also serves as a guide to the many websites within this domain as well as others, such as WinnipegTransit.com and WinnipegAssessment.com. As the true public homepage for the City of Winnipeg's Internet presence, Winnipeg.ca would offer Winnipeg citizens a logically organized content architecture that was based on their perception of City services. Thus, rather than having to know where the location of all of the content on a site that has thousands of pages of documents and service-related pages, citizens would only have to familiarize themselves with the homepage and the main header links and four primary menu items (ie. Residents, Business, Visitors, City Hall). For those who wish to explore, flyout menus from these four primary menu items provide links logically divided into service areas.

The success of the Winnipeg.ca content strategy depends on the effective collaboration between departmental Web publishers and the Corporate Web Services team. Collaboration, strategic planning and dedication must go into the production of a rapidly evolving municipal Internet presence.

All editorial decisions for Winnipeg.ca are subject to the editorial guidelines below as well as the discretion of the Corporate Web Manager.

2.3 – Editorial Guidelines for Winnipeg.ca

Winnipeg.ca is the Internet gateway to all City of Winnipeg corporate, departmental, divisional and special operating agency (SOA) sites, including non-Winnipeg.ca domains such as winnipegtransit.com and winnipegassessment.com.

The City of Winnipeg's websites are an essential business tool in achieving quality customer service and meeting citizen expectation for more accessible government; in particular, the provision of citizen-focused, user-friendly, accurate and timely information. They are one of the few mechanisms the City has to be able to present a global image of our corporation. As such, the application of a corporate strategy and related standards are critical to ensure a contemporary and effective website that is easily accessible and navigable for Winnipeg citizens, as well as for our global e-visitors. These standards also apply to intranet sites intended for City of Winnipeg staff, business suppliers and partner organizations.

The following editorial rules apply to the corporate homepage at <http://Winnipeg.ca>, which is managed by Corporate Web Services, as well as departmental sites, departmental subsites and all shared content i.e. corporate includes such as the search engine, the global header, the global footer, etc.

2.3 (1) - WINNIPEG.CA HOMEPAGE - The homepage is intended to serve only as a high-level navigation page for the site rather than being a content-rich page in itself. Thus, it mostly features links rather than actual content. The exception is the eServices panel, the feature graphics under the homepage gallery image, and the Winnipeg.ca News and Highlights headlines. eServices, News and Highlights all include links to separate pages where additional and/or previously published content can be found. Highlighted links on the homepage should draw attention to new documents or features such as the 2010 Adopted Capital Budget or Smoking Bylaw. They are 1) of broad interest to citizens and the City of Winnipeg; 2) have a longer shelf life than news items and may be replaced periodically with updated documents or pages, and 3) are only featured on the homepage until the next highlight is posted, after which they are archived for an indefinite period.

2.3 (2) – WINNIPEG.CA GLOBAL HEADER – The new header, which is found on all Winnipeg.ca pages, is applied globally using three server-side include files which are provided and maintained by Corporate Web Services. The use of title headers for department and service area subsites has been discontinued.



There are three separate sections within the header, which are described in detail below.

2.3 (3) – WINNIPEG.CA GLOBAL HEADER - TOP NAVIGATION – This section is located at the very top of every page on Winnipeg.ca which includes a link back to the homepage; a link to the French version of the website, which changes to a link to the English version if on the French site; and the Search tool. Users can search by keyword or phrase. The “Search” engine utilizes a Google Search Appliance, but quality of results is still dependent on how thoroughly HTML pages and PDF files have been metatagged by content owners.





2.3 (4) – WINNIPEG.CA GLOBAL HEADER – LEFT SIDEBAR TOP – This section is located on the left and contains the official City of Winnipeg logo. Clicking on the logo from any page of Winnipeg.ca takes the user to the homepage.

Underneath the City of Winnipeg logo is the 311 City Services logo. Clicking on this logo takes the user to the 311 subsite.

2.3 (5) – WINNIPEG.CA GLOBAL HEADER – BANNER AND MENU BAR – This section is located to the right of the City of Winnipeg and 311 logos.



At the top of this section is the banner, which is a panoramic aerial photo of Winnipeg. Clicking on the banner from any page of Winnipeg.ca takes the user to the homepage.

The navigation menu is located underneath the banner and is discussed in detail below.

2.3 (6) - WINNIPEG.CA GLOBAL MENU BAR – The main navigational element that is consistent on every page of the Winnipeg.ca website is the menu bar containing the navigation menu.



After researching the navigational structure of other municipal governments, and in consultation with the 311 team and Corporate Communications, four primary menu items were chosen to group City services. Each menu has its own color, and all departmental and service area subsites reflect the color of the menu they are located under:

- Residents - red
- Business - gold
- Visitors - orange, and
- City Hall - green

The first three primary menu items represent the demographic of users that will visit the City's website. Each has a drop-down menu which includes the information and services that the respective citizen expects from the City of Winnipeg. The fourth menu item includes a drop-down menu with political and administrative information relating to the City of Winnipeg.

Also located in the menu bar on the far right are links to:

- 311 Self Service
- Site Map

These two items link directly to their corresponding subsite/page; they do not have a drop-down menu associated with them.

The Corporate Web Services team maintains the menu bar and can easily change, add or remove items in the four primary menus based on feedback from users or new content being added to department or service area subsites.

In this redesign, the navigational elements are located in one spot – in the header on every page. Previously, there were two areas of navigation – one in the main header and one in the left sidebar. The navigation for Winnipeg.ca was separated into 10 Guide pages with the links to departments and services. Redesigning the navigation to have only four primary menu items drastically reduces the number of locations a service could be listed under. The most popular content is now accessible by “one click” from the homepage or the header on any page of Winnipeg.ca.

2.3 (7) - WINNIPEG.CA HOMEPAGE FEATURES – The content area of the Winnipeg.ca homepage now features (1) one optional banner size feature image of 500 x 52 pixels at the top; (2) eight feature images of 115 x 95 pixels underneath the banner and separated into two rows of four; (3) a feature block with text links highlighting various areas of the site;

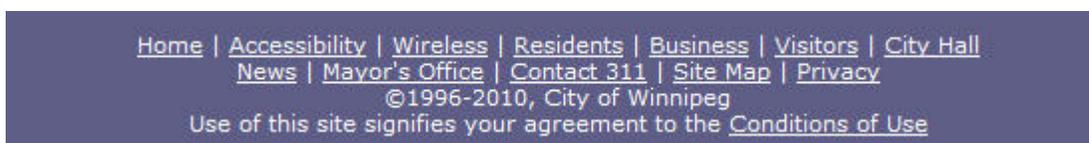
Content posted to the content area on the homepage must be approved by the Corporate Web Manager or by a designated team member from Corporate Web Services. The banner and eight feature images/graphics shall be used to promote content that is a) of broad interest to citizens of Winnipeg, and 2) of strategic importance to The City of Winnipeg as a whole, these features will change frequently and will not remain indefinitely.

Feature text links or buttons must link directly to an application or other interactive interface unless an intervening page is required for usability purposes. The content area may include content that extends the page past one screen view to “below the fold”, if necessary.

2.3 (8) - RIGHT SIDEBAR – The new right sidebar is customizable for the web page it sits on. A CSS class in the <body> tag of each page can be changed to hide or show the right sidebar. When the right sidebar is enabled, the width of the content area is 525 px. When it is disabled, the width of the content area is 745 px. The right sidebar has a number of CSS styles that can be applied to have multiple sections within the sidebar. Each section can be a different color, and the list items within the content area under a section will reflect that color. More information on the CSS styles available can be found on CityNet under [eTools > Web Publishing > New Look Samples](#).

The homepage right sidebar has News and Highlights as the sections. The News headlines include the four most recent headlines. A link to More News and an RSS Newsfeed are found below the News headlines. The Highlights section features some of the most popular documents are listed, such as Budgets and Reports.

2.3 (9) – GLOBAL FOOTER – The global footer is a server-side include maintained by Corporate Web Services that contains the following links and must appear at the bottom of all Winnipeg.ca pages:



3.0 – Corporate Web Standards, Guidelines & Procedures for Internet Sites

3.1 – Content Management

The City of Winnipeg's Internet presence at Winnipeg.ca is a federated website that uses a combination of centralized and decentralized content management processes.

3.1 (1) OWNERSHIP OF CONTENT – Content ownership belongs to the department that maintains the content in their folders within their subsite. Content owners may not necessarily be the content author (e.g. another department authors a document that you store in your folder on the server).

3.1 (2) LINKS TO CONTENT – Links to content and applications owned by another department/service area are the responsibility of the department/service area that owns the link. In other words, it is the responsibility of those providing links on their pages to ensure the links are accurate and usable. The exception to this is links on the corporate pages, e.g. links on the Winnipeg.ca homepage, services pages or navigation menus/bars that are provided corporately through server-side includes in a shared folder.

3.1 (3) USABILITY STANDARDS FOR ALL WEB APPLICATIONS – All departmental/service area Web staff are responsible for working with the Corporate Web Manager to ensure common usability standards are maintained throughout the City's Internet presence. Where usability issues arise due to content initiatives in one area conflicting with that of another (e.g. duplication of services, broken links, incorrect or misleading information, etc), each party involved should meet with the Corporate Web Manager to resolve the issues with due diligence. If possible, content owners and developers should proactively meet with the Corporate Web Manager and other stakeholders in advance to prevent possible usability issues from impacting the public.

3.2 – Official City of Winnipeg Domain Name

The official City of Winnipeg domain is www.winnipeg.ca or simply Winnipeg.ca. This is important for two reasons:

- 1. Branding:** The corporate image is a major strategic concern that can have a direct impact on the level of success the organization achieves through its other marketing and management efforts. As well, a coherent corporate image needs to be integrated into the organization at all levels. The corporate brand affects the perception of the nature, culture and structure of that organization and its performance, products and services. These perceptions affect its ability to recruit the financial resources, people and partnerships it needs to attain its goals and objectives.
- 2. Authenticity of Identity:** Along with brand recognition of Winnipeg.ca, a single corporate domain name creates an authenticity of identity to Web users who may otherwise be confused by similar sites (such as privately-owned, commercial sites that are about Winnipeg) or sites that attempt to deceive users into thinking that they are visiting a City of Winnipeg site (e.g. Winnipegpolice.com). Citizens and other Web users can be confident that if they are visiting the Winnipeg.ca domain, they are on a genuine City of Winnipeg site.

Canonical domains or virtual Webs should be pre-approved in writing by the Corporate Web Manager.

Non-official domains may be registered and/or operated by Web Publishers only with the written approval of the Corporate Web Manager. To submit a request to register and/or operate a non-official domain name, a business case must be submitted to the Corporate Web Manager for review.

Existing un-official domains should not be promoted or advertised to the public (only Winnipeg.ca domains should be promoted in advertising and the media).

All domain names registered by the City of Winnipeg through any department are considered to be the property of the City of Winnipeg and may not be transferred, sold or traded to other organizations or individuals.

3.3 – Winnipeg.ca Homepage (topsite)

Winnipeg.ca is a citizen-centred, service-based site that provides one homepage and one URL for citizens to access all City of Winnipeg information and services available on the Internet. Having a consistent look and feel throughout the website emphasizes to Web visitors that all subsites within Winnipeg.ca are provided by the City of Winnipeg

of Winnipeg to enable citizens and other users to connect with services and information online, anytime, at their convenience. Content on the site includes static HTML pages, static documents, multimedia objects, archived data and application-based services.

The homepage is managed corporately (by the Corporate Web Manager and Corporate Web Services team) and is intended to be the portal or gateway to the entire City of Winnipeg Internet presence, including all corporately-managed pages, departmental and service area subsites and applications at domain Winnipeg.ca, and subsites at non-standard domains such as winnipegassessment.com and winnipegtransit.com.

Key corporate information that is high level and current (e.g. news releases, budget documents) is featured on the homepage, which always displays the current date. As well, online services and global links (e.g. Contact, Accessibility, Privacy, etc) are featured on the homepage so that users have one-click access to general information and application-driven content such as eCIS.

The target or primary audience for Winnipeg.ca is the citizenry of Winnipeg.

Secondary audiences include residents of Manitoba outside Winnipeg, residents of Canada outside Manitoba, international visitors, business, industry and tourism. The primary objective of Winnipeg.ca is to serve Winnipeggers first, but also to provide a user-friendly site where non-Winnipeggers, businesses and tourists can locate information and links of interest. Winnipeg.ca also uses a “no wrong door” approach by providing clearly marked links to public organizations and levels of government so that people who are searching the site for non-City services or information will be directed to the appropriate site or agency.

Given that the Winnipeg.ca site includes thousands of links and thousands of pages/documents, it is not feasible to have an exhaustive menu or list of links to all content from the homepage. Instead, visitors to the site can find services using the menu that fits their demographic (i.e. Residents, Business, Visitors), or if they are interested in political and administrative information relating to the City of Winnipeg, they can utilize the City Hall menu. This self-selection process helps users narrow their possible content choices in a menu that contains direct links to content pages and application-based services being developed and maintained by several departments.



3.3 (1) – WINNIPEG.CA HOMEPAGE LEFT SIDEBAR - The left-hand sidebar found on the Winnipeg.ca homepage is managed by Corporate Web Services.

The links provided in the corporately managed sidebar are:

- E-Subscribe
- Events Calendar
- Media Inquiries
- Council Meetings and Agendas
- Mayor website
- Weather
- EmergWeb

3.4 – Department and Service Area Subsites

To conform to Winnipeg.ca standards, all pages on department and service area subsites must include (see Figure 1 above):

- Global Winnipeg.ca Header
- Customizeable Left Sidebar
- Global Footer



3.4 (1) – SUBSITE LEFT SIDEBAR - The left-hand sidebar can be customized for the department or service area subsite.

The key elements which must be in every left sidebar are:

- Department/service area title of subsite link (ex. Winnipeg Public Library). This must be a link back to the parent page (ie. subsite homepage).
- Contact Us link (can be renamed to subsite title, ex. Contact Library)
- Site Map link (can be renamed to subsite title, ex. Library Site Map)

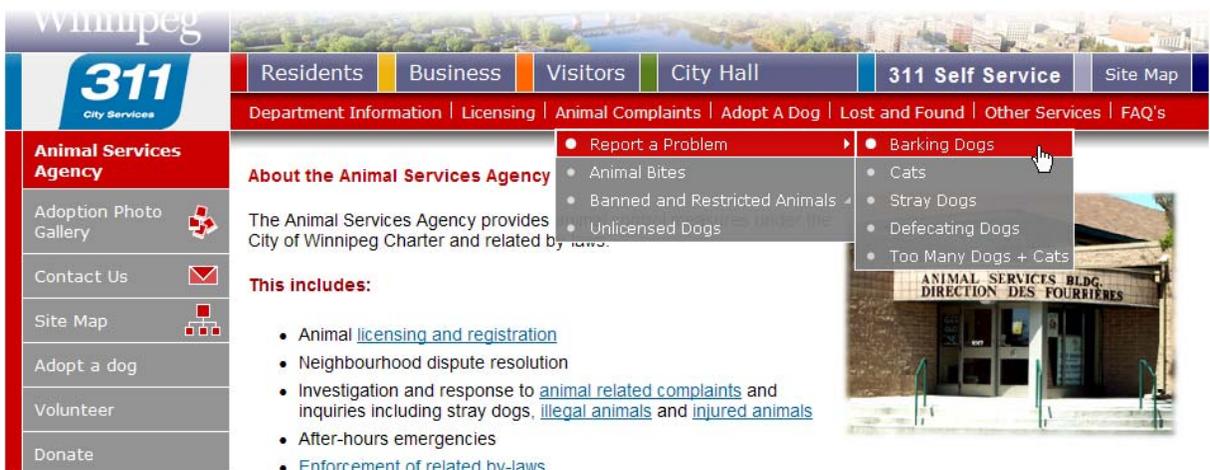
Images may be added to the left sidebar, and must be 163 px wide. More detailed information on CSS styles that can be applied in the left sidebar can be found on CityNet under [eTools > Web Publishing > New Look Samples](#).

It may be required to add a link to EmergWeb in the left sidebar of a subsite when necessary. EmergWeb is the City of Winnipeg emergency information website which is activated in the case of an emergency within the city of Winnipeg. A request to add this link will be made at the discretion of the Emergency Public Information Team Coordinator, or the Corporate Web Manager.

3.4 (2) – SUBSITE MENU BAR - A subsite may have it's own contextual menu underneath the global menu bar which is located in the header. This menu will be maintained by the Departmental/Service Area Web Publisher and can be one or two lines in height. This menu can contain up to 3 levels of flyout menus:

- Contextual menu items >
- First level menu items >
- Second level menu items >
- Tertiary level menu items

For more information on developing this menu bar, please contact Corporate Web Services. Examples of a one and two-line menu are shown below.



Animal Services subsite with a one-line contextual menu



Film and Special Events subsite with a two-line contextual menu

3.4 (3) – SUBSITE HOMEPAGES AND CONTENT - Except for the requirements indicated above, Departmental/Service Area Web Publishers may use their own judgment for designing and maintaining their Departmental/Service Area homepages based on a) their knowledge of the usage habits of those who use their subsite, b) their departmental business plans and requirements, c) best practices found on the Web in general and on other departmental subsites in specific, and d) discussions and feedback from the Corporate Web Manager, Corporate Web Services and the Web Publishers Committee.

Departmental/Service Area Homepages should follow these basic principles.

- **CORPORATE LOOK-AND-FEEL:** Departmental/Service Area homepages must complement or match the Corporate Look-and-Feel in color, font styles, and Universal Design standards (see the [City of Winnipeg eStyle Guide](#)). Local style sheets must not override the fonts and link colors specified in the global stylesheet.
- **GRAPHICAL ELEMENTS:** Departmental/Service Area homepages must include at least one graphical element that depicts some aspect of the department's core business. If possible, (but not required) the image or images should feature actual staff from the department to provide the page with a more personalized, "human" view of the site. There is City of Winnipeg staff supporting the services and information found on every Web page, so the Web pages should try to depict the people involved (see eStyle Guide for guidelines on use of images). Other graphical elements such as icons may be used, provided these are used consistently within the departmental subsite (e.g. icons developed for one division must be used in all other divisions within that department as well) and provided they follow guidelines for graphical images found in the 2005 eStyle Guide.
- **WHAT'S NEW/HIGHLIGHTS:** Departmental/Service Area homepages should include text information, updated periodically, to indicate new initiatives or programs or to highlight/illustrate important new content features.
- **COLUMN FORMAT:** Departmental/Service Area homepages must use a **single-column** format, but a Right Sidebar include file may be created and maintained by the department/service area, provided it is used consistently throughout the subsite.
- **VISIBILITY OF HOMEPAGE CONTENT:** Departmental/Service Area homepages should feature key content on the part of the page that is visible at the standard screen resolution of 1024 x 768, so that users will not miss this key content if they do not scroll down the homepage. This is a usability issue that will have to be determined by the business requirements and best practices of the department/service area.
- **CONTACT INFORMATION:** A link to a departmental/service area contact page must be provided in the Left Sidebar. See 3.4 (1) for more information.

Content Pages should follow these basic principles.

- **CORPORATE LOOK-AND-FEEL:** Departmental/Service Area pages must complement or match the Corporate Look-and-Feel in color, font styles, and Universal Design standards (see the 2005 eStyle Guide). Local style sheets must not override the fonts and link colors specified in the global stylesheet.
- **GRAPHICAL ELEMENTS:** Departmental/Service Area pages should use a combination of graphical elements, links and text to make the content visual, usable and intuitive. Other graphical elements

such as icons may be used, provided these are used consistently within the departmental/service area subsite (e.g. icons developed for one division must be used in all other divisions within that department as well) and provided they follow guidelines for graphical images found in the 2004 eStyle Guide.

- **COLUMN FORMAT:** Departmental/Service Area pages must use a **single-column** format, but a Right Sidebar include file may be created and maintained by the department/service area, provided it is used consistently throughout the departmental/service area subsite.
- **VISIBILITY OF CONTENT:** Departmental/Service Area pages may be long enough that users are required to scroll down to view content not visible on the first screen, but this is a usability issue that will have to be determined by the business requirements and best practices of the department/service area.
- **CONTACT INFORMATION:** A link to a departmental/service area contact page must be provided in the Left Sidebar. Additionally, contact information, or a link to the Contact Us page, should be included within the body of any page that is providing information on City services.

3.5 – Web Applications

Dynamic web applications can be customized for the requirements of the application. However, applications must be designed to include the City of Winnipeg official logo on the left side in the header. Clicking on the City of Winnipeg logo in the application header must take the user to the Winnipeg.ca homepage.

Some additional suggestions are below:

- The panoramic aerial photo of Winnipeg could be included in the header to the right of the logo to maintain consistency with the rest of Winnipeg.ca.
- The application header could include the name of the application, along with any graphics or photos that relate to the application.
- Clicking on any portion of the application header other than the City of Winnipeg logo could take the user to the application homepage.

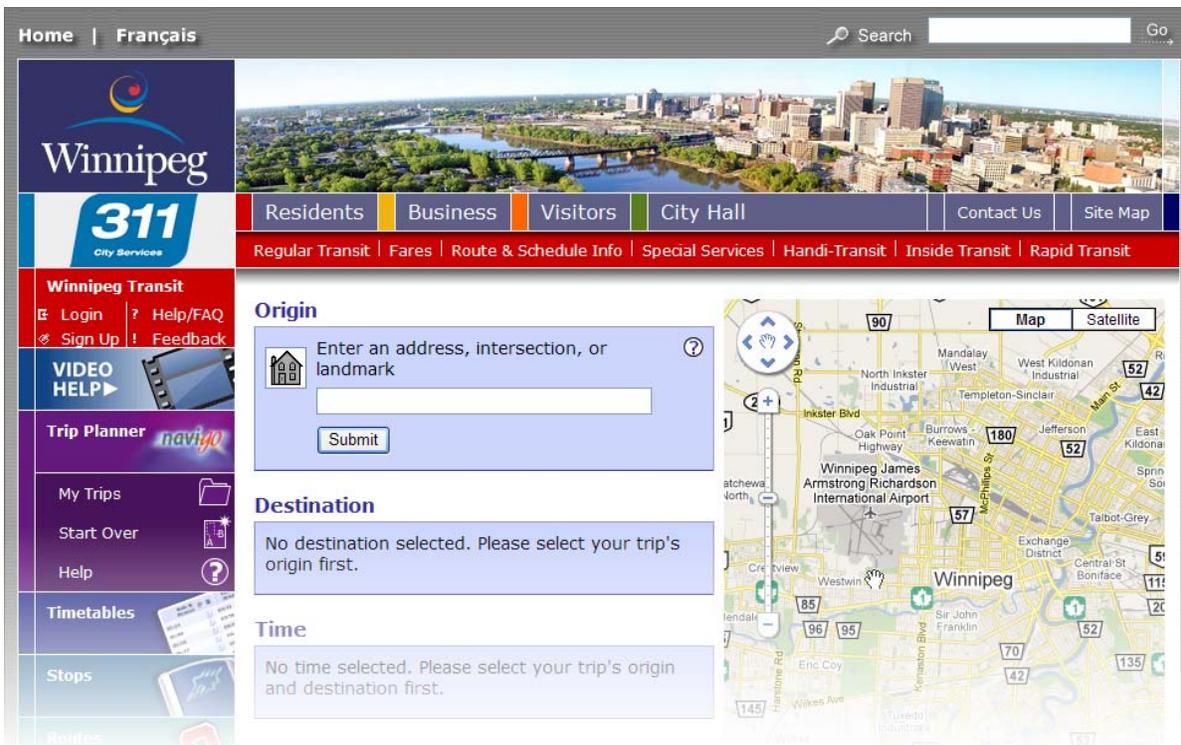
The application owner maintains the header but is welcome to request the assistance of Corporate Web Services in the development of the look and feel of the application.

NOTE: All headers must display the official City of Winnipeg logo in accordance with Visual Identity guidelines.

Web Application examples:



iMaps



Transit Trip Planner (Navigo)

3.6 – Guidelines for Publishing French Content on the Internet and Intranet Sites

These guidelines are meant to help clarify what steps should be taken if you want to publish content bilingually and add/update French content on the [French Internet site](#).

The French Internet site is maintained by the Translation and Interpretation Services team. Most civic departments have a fee for service agreement in place. That agreement guarantees you access to qualified translators and a rate that is lower than market value.

If you are posting the English version of material that may have already been translated, very little work is needed to add the French version as well.

For work that hasn't already been translated, if you or other members of your department decide that a Web page or a document should be provided on the Internet in French, as per the French language requirements indicated in [By-law No. 8154/2002](#), please follow these procedures:

1. Submit the final draft of the content to [CSD-Translation](#) (or you may wish to use this [CityNet form](#)). Web pages or documents with large amounts of English copy should be submitted as soon as possible (final draft stage). You will have to provide an account number so the translation work can be billed to you.
2. Translation and Interpretation Services staff will determine the translation costs and timelines required to complete the requested work. If necessary, staff will be happy to provide you with a preliminary cost estimate.
3. Indicate when the page or document should be posted to the French Internet site. A member of Translation and Interpretation Services will arrange to post the content once the final translation has been reviewed and approved.

In some cases, if a page or document is time-sensitive and there is insufficient time before the publication deadline date to complete the translation and have it posted to the French Internet site, you may have to consider a non-simultaneous posting of English and French (e.g. publishing to the [English Internet site](#) first, then publishing the French when it is available).

Please contact the coordinator at 986.2674 if, after discussing your needs with Translation Services staff, you have any concerns about the timing or costs of the translation work you are requesting.

4.0 – CityNet and Intranet Sites

-- Removed – not relevant to this RFP –

6.0 – Administrative & Legal Requirements for Internet and Intranet Sites

6.1 – Legal Statements and Disclaimers

The following Conditions of Use and Privacy Statements must be linked on all City of Winnipeg Web pages:

Conditions of Use Copyright [current year] City of Winnipeg

While The City of Winnipeg provides the information on this website to anyone, it retains copyright on all text, graphic images and other content.

This means that you may not, without the express written permission of The City of Winnipeg:

- Distribute all or any portion of the text, graphics, or content, in any way, shape or form, to others.
- "Mirror" or display all or any portion of the text, graphics, or content on your website.
- Modify or re-use all or any portion of the text, graphics, or content on this system

You may:

- Print copies of the text, graphics, or content strictly for your own personal use.
- Reference this website from your own documents.

Commercial or any other use of all or any portion of the text, graphics, or content is prohibited without the written permission of The City of Winnipeg. In all copies of the text, graphics, or content, except as specifically listed above, you must retain this notice and any other copyright notices originally included with the text, graphics, or content.

Specific permission for reproduction or use for other purposes must be obtained from The City of Winnipeg by contacting:

Web Manager The City of Winnipeg 3rd Floor Administration Building 510 Main St Winnipeg MB Canada R3B 1B9
Email: [Web Manager](#)

The City of Winnipeg reserves all other rights.

Disclaimer of Liability

Please read this disclaimer.

The City of Winnipeg does not warrant or make any representations as to the quality, content, accuracy, or completeness of the information, text, graphics, links and other items contained on this website ("Winnipeg.ca") or any other website. Such materials have been compiled from a variety of sources and are subject to change without notice from The City of Winnipeg. Commercial or any other use of all or any portion of the text, graphics, or content, except as specifically listed in the Copyright Notice, is prohibited without the written permission of The City of Winnipeg.

Links to websites not maintained by The City of Winnipeg will open in a new browser window. Winnipeg.ca's provision of these links does not imply approval, warrant the quality, content, accuracy or completeness of any information, or endorse any opinion expressed on any of these outside websites. The City may in its sole discretion, accept or deny any requests for references to or links to third party sites.

Communications made through Winnipeg.ca's email messaging system shall in no way be deemed to constitute legal notice to The City of Winnipeg or any of its agencies, offices, employees or representatives with respect to any existing or potential claim or cause of action against The City of Winnipeg or any of its agencies, officers, servants, agents, employees, or representatives, where notice to The City of Winnipeg is required by Provincial, Federal or local laws, rules or regulations.

[Read our Privacy Statement](#)

Privacy

This page summarizes the privacy policy and practices on The City of Winnipeg Internet site ("Winnipeg.ca").

Principles

As a local public body The City of Winnipeg is subject to The Freedom of Information and Protection of Privacy Act. If you have any general questions about Manitoba's The Freedom of Information and Protection of Privacy Act, please see the FIPPA website. The City of Winnipeg is committed to providing our visitors with an Internet site that respects their privacy. Winnipeg.ca does not automatically gather any personal information from you, such as your name, phone number, email or address. This information is only obtained if you supply it voluntarily through contacting us via email or online forms.

Logging of Site Visitors

Like most Web servers, the City of Winnipeg server collects some information about visitors to the site. However, the server only logs the domain name of visitors. Depending on the setup of your internet service provider (ISP), this information may identify who you are; you may wish to contact your ISP for more information in this regard. The log data is analyzed for trends and statistics, and then aggregated. If you have any questions about the information gathered automatically by Winnipeg.ca, please contact the Corporate [Web Manager](#).

6.2 – In-linking (links from external websites to City Internet pages)

The World Wide Web is, by definition, an Internet network made up of websites joined by hyperlinks. Internet users find value in the ability to access websites linked on the World Wide Web.

To promote the proliferation of the City of Winnipeg's URL (Web address) on the Internet and provide Internet researchers and searchers with the ability to locate the City of Winnipeg website, requests to link from an external (non-City of Winnipeg website) to the City of Winnipeg website will be allowed, with the following requirements:

- Links to the City's website must open in a new window and not be framed within the pages of another website.
- Deep linking is not permitted – external sites may only publish a link to the City of Winnipeg homepage or to a department or division's front page, not to deeper pages.
- Special permission must be granted by the Chief Administrative Offices before an external website can use the City of Winnipeg wordmark, crest or any other City-owned intellectual property.

6.3 – Out-linking (links from City Internet/intranet pages to external websites)

The City of Winnipeg does not currently have an official Standard regarding the inclusion of external websites (non-City of Winnipeg sites) on a City of Winnipeg websites. However, a recent Report on Corporate Advertising and Sponsorship does recommend some restrictions with regard to advertising, sponsorships and links to the City's Internet and Intranet sites. Therefore the inclusion of external links is at the discretion of the Corporate Web Manager and content authors in each department, and may be subject to review by the City of Winnipeg Legal department.

Links to non-profit, public service or government sites may be acceptable (e.g. links to Tourism Winnipeg, MTS phone listings or Government of Canada sites), depending on whether the content on the sites offers value to those who are visiting the City of Winnipeg website.

However, if there is no formal, approved partnership or other arrangement with an outside website operated by a for-profit organization, the City should not link to the site as this may constitute an inappropriate use of public resources.

In some cases, requests to include an external hyperlink to the City of Winnipeg website should be politely declined until further notice. Please contact the City of Winnipeg Corporate Web Manager if you wish to submit an external link request for review.

Guidelines:

- Links to external sites must open in a new window and not be framed within the City of Winnipeg website
- As well, you may wish to advise visitors to the page that if they click the link, they will be taken outside the City of Winnipeg site to an external site.
- A disclaimer may be added to state that the City of Winnipeg is not responsible for the content on the external site.
- Links to external sites should be reviewed frequently to ensure the links have not changed or been removed by the owner of the site

Why this is important

Winnipeg.ca is a high-traffic site. External sites benefit from having their link included on our site as this promotes traffic to their site(s). In some cases, it may be inappropriate for the City to provide this benefit to another organization using City resources.

As well, there are many risks associated with links to external sites:

1. External links may change or become inactive. Most of the time, websites will not inform other linked sites when their link is changing or becoming inactive, so it becomes the ongoing responsibility of the City of Winnipeg website to ensure all links are correct and active.
2. As with any website, content on the linked sites may change at any time. Content on the linked site may be inappropriate, in conflict with the City's policies or even offensive to those who visit the site(s). Opinions, ideas or other information published on an external site may expose the City to legal risk.

In some cases, domain names are acquired or purchased from the original owner and the former site is replaced with a site that may be offensive to City of Winnipeg website visitors or inconsistent with the City's policies.

6.4 – Universal Design

Statement of Intent: The City of Winnipeg Internet and Intranet will conscientiously provide leadership in thought and action by institutionalizing a commitment to creating a city that is truly inclusive of all citizens through endorsing and incorporating the concept of Universal Design.

Goals:

- To accept that the population in Winnipeg has a variety of different abilities, strengths, heights, etc. and that this should not exclude or segregate anyone from participating in community life and accessing and using municipal services.
- To reduce the need and costs associated with providing disability specific solutions by providing a generalized approach to design that accommodates a wider range of people.
- To ensure that new civic buildings, environments, products, services and programs are designed to be useable by a wide range of citizens.
- To promote a city that is comfortable, attractive, and inclusive.

For Universal Design guidelines for the Web, go to the Web Publishing section on CityNet or read this complete checklist of UD guidelines to follow:

<http://citynet/intrahom/ud/>

7.0 – Other Guidelines & Recommendations for Internet and Intranet Sites

7.1 – Guidelines and Recommendations for Acrobat PDF files

7.1 (1) - Determine whether content can be published in HTML format rather than PDF format. HTML pages load more quickly and are fully searchable by our internal search engine as well as external search engines.

7.1 (2) - Partition PDF files more than 5 MB file size. We recommend that PDF files larger than 5 MB be partitioned into smaller documents (e.g. part 1, part 2, etc) for usability purposes and to ensure the most efficient use of system resources.

7.1 (3) - Optimize all PDF files. To optimize PDF files to a smaller file size, use the “Print > Print to PDF (Distiller)” option rather than using the PDF icon on the toolbar of your Word or, Excel or Powerpoint application. This will result in a much smaller file size.

7.1 (4) - Optimize all source files. Ensure you have minimized the file size of your Word, Excel or PowerPoint documents before printing to PDF.

7.1 (5) - Metatag your PDFs. The City of Winnipeg’s search engines can index PDF files according to their metacontent, so please ensure all PDF files are metatagged before putting them into production. In Acrobat, go to File > Document Properties, select the Description tab, then enter the Title, Author, Subject and Keywords relevant to the document.

7.1 (6) – Indicate file size. Beside the link to the PDF file, indicate the file size in parentheses, e.g. (1.2 MB) so that users have a general idea of how long it may take to download the file. As well, the page where the PDF link is found may also include a link to the Adobe site where users can download a current version of Acrobat Reader if they do not have this installed on their PC already.

For more information or to request corrections/additions/amendments to this document, please contact the Corporate Web Manager by email at webmanager@winnipeg.ca.

Appendix C

Universal Design (Accessibility)

Winnipeg City Council Adopts Universal Design Policy

Accessibility on web pages:

- **Images & animations** - Use the alt attribute to describe the function of each visual. Use the "alt Tag Name" text from this page [icon list.stm](#) for icon alt tags. For headings (etc.) alt tags, use the text of the tag (E.G. hdr_tabcontent_services.gif would be "Services").
- **Pictures** should be labeled with a short description of what the picture depicts. See example below.



City Hall in the spring.

- **Image maps** - Use the client-side map and text for hotspots.
- **Multimedia** - Provide captioning and transcripts of audio, and descriptions of video.
- **Hypertext links** - Use text that makes sense when read out of context. For example, avoid "click here."
- All images that are links, should also have text links.
- **Page organization** - Use headings, lists, and consistent structure.
- **Graphs & charts** - Summarize or use the longdesc attribute.
- **Scripts, applets, & plug-ins** - Provide alternative content in case active features are inaccessible or unsupported. In our case, ensure you provide a TOC listing along with the initial "dropdown listbox" page.
- **Tables** - Make line-by-line reading sensible. Summarize.
- No additional information shall be added on the status bar of the browser.
- **DO NOT** use the "... MORE ..." text as a link to the continuation of an article. Instead use the image ico_body_more.gif (found in the shared images library), with an alt tag of "For more information on this topic, please click on the previous link".
- Check your work. Validate. Use tools, checklist, and guidelines at:
 - <http://www.w3.org/WAI/wcag-curric/sam1-0.htm>
 - <http://www.w3.org/TR/WCAG>

Access keys

Most browsers support jumping to specific links by typing keys defined on the web site. On Windows, you can press ALT + an access key; on Macintosh, you can press Control + an access key.

Access keys used on this site:

- Access key 1 -Top navigation above the page header (Home, Francais, Search)
- Access key 2 - Service-based flyout menus in the page header
- Access key 3 - Left menu
- Access key 4 - Page content
- Access key 5 - Right sidebar (if it exists on the page)
- Access key 6 - Footer

Pages which conform to the access keys defined above, should have a UD

appended to the Title tag of the page after City of Winnipeg:

<TITLE>City of Winnipeg - UD : location of your page</TITLE>

PDF's: When creating a PDF use the "make accessible" plug in to format the PDF for easier screen reading. The plugin is accessible on our FTP site and will only work with Acrobat 5 ftp://citynet/pub/Acrobat_addIns/MakeAccesiblePlugIn.exe.

Acrobat 6 has some options built right into the program.

- Advanced > Accessibility > Quick Check
- Edit > Preferences > Reading

Universal Design Contact

Contact Administrator at
jredmond@winnipeg.ca

Last update: 19.05.2009

* [Top of Page](#)

Appendix D

Report of the Executive Policy Committee dated December 5, 2001

Universal Design Policy

File CR-3 (Vol. 5)

4. The Executive Policy Committee has been advised that the Access Advisory Committee (AAC) has been requested by the Mayor's office to research and provide feedback on a Draft Universal Design Policy written by a community group, the Inter-organizational Access Committee (IOAC). The AAC has worked in cooperation with the community, the Chief Administrative Officer's office and key departments to further develop the existing report and consider the implications to the city. The AAC and administration have developed revised recommendations towards a strong overall policy for Universal Design. If Winnipeg's City Council accepts Universal Design as a proactive approach to doing city business, this policy would be the first of its kind in Canada.

Many civic facilities were built in the 1960's and 1970's, prior to barrier free building code. It has been expensive for the city to retrofit all its buildings to bring them up to current barrier free standards. The Public Works and the Planning, Property and Development Departments have established a plan to prioritize remaining identified structures that require access issues be addressed. The City of Winnipeg receives numerous requests from the community to ensure not only buildings and landscaping are safe and accessible, but also information, communications and services. Recognizing the proactive approach the city is taking in the area of barrier free design, but being cognisant of the expense, the AAC along side the Inter-organizational Access Committee has determined future major renovations and new projects should be viewed using a perspective of Universal Design.

In 1998, Winnipeg Development Agreement Program 5C funded a project which allowed an outside organization to audit the civic properties defined by the Centre Plan borders for accessibility. This was done under the supervision and guidance of the AAC. One recommendation from this audit was that the City of Winnipeg adopt a policy on Universal Design.

The citizens of Winnipeg have a variety of different abilities, strengths, heights, etc. and this should not exclude or segregate anyone from participating in community life and accessing and using municipal services. Since 1999, significant effort by a number of people and organizations has gone into the development of a Universal Design Policy ranging from the formulation of a proposed Universal Design by-law by the Inter-Organizational Access Committee, through to input from the Mayor and Chief Administrative Officer. Over the past year, the Access Advisory Committee has been working with a Technical Steering Committee comprised of: the Directors of Public Works, Planning, Property and Development, Winnipeg Transit and the Corporate Services Equity and Diversity Coordinator. Its purpose has been to balance the needs of the community with the realities of civic government not only with respect to available resources but also as to how the city conducts business. Following this we consulted with divisional management and their response has been favourable. All input from the administration and the community has been considered and built into the Access Advisory Committee's recommendations. The goal of this policy is to have a city that is inclusive, comfortable and attractive for everyone.

Participation provides a vehicle to define the population, collect relevant information, open lines of communication and to share decision-making. Through the consultation and development process of the Universal Design Policy, the AAC has recognized the value of a cross disciplinary approach including participation by all stakeholders. With that in mind, the Access Advisory Committee seeks to continue the momentum of systems collaboration. The Universal Design interdepartmental implementation team established by the Chief Administrative Officer would preserve the proactive, inclusive approach to design and decision making which is inherent in the concept of Universal Design. Because Universal Design can be applied not only to environments and buildings, but also to systems, information,

Report of the Executive Policy Committee dated December 5, 2001

products and services, a comprehensive plan will be necessary. This team will continue to enhance strategies for moving this document from policy into practice in a timely and cost effective manner.

By December 2002, a completed progress report should be submitted to the Executive Policy Committee by the Universal Design interdepartmental implementation team. This will assist the Access Advisory Committee under their mandate to keep Council informed on the progress of accessibility issues within The City of Winnipeg through the Universal Design Policy.

On November 14, 2001, the Executive Policy Committee laid the matter over for 30 days.

The Executive Policy Committee recommends:

- I. That City Council adopt the Universal Design Policy for The City of Winnipeg as recommended by the Access Advisory Committee and outlined on Appendix "B".
- II. That the Chief Administrative Officer establish an Interdepartmental Implementation Team to manage the implementation of this policy.
- III. That the Interdepartmental Implementation Team provide a Universal Design progress report to Executive Policy Committee by December 2002.
- IV. That the Proper Officers of the City be authorized to do all things necessary to effect the intent of the foregoing.

Universal Design Policy – Executive Summary

The following is a summary of the intent, methodology and implementation of the Universal Design Policy as approved by the Access Advisory Committee October 16, 2001.

1. That the City of Winnipeg will ensure all new construction and/or major renovations to buildings, exterior environments, as well as purchases and new developments in services, products, or systems that are funded in whole or part by The City will follow Universal Design criteria.
2. That the Chief Administrative Officer will establish an interdepartmental implementation team to steer this policy. This team would consist of representatives from the Access Advisory Committee and the following civic departments: Public Works, Planning, Property and Development, Winnipeg Transit, Corporate Finance – Materials Management, Corporate Services – Human Resources – Information Technology, the Equity and Diversity Co-ordinator, and any others deemed necessary. (Appendix B – Part 2, Statement of Intent: Interdepartmental Implementation Team)
3. That Corporate Education works with the interdepartmental implementation team to assist in the development of education programs to meet the diverse needs of each department. This will range from developing new programs and training tools to utilizing existing ones. (Appendix B - Part 3, Section 1: Education)
4. That the “Universal Design Checklist” be used as an assessment tool to evaluate how well the design of a building or product or service meets the criteria of Universal Design. (Appendix B - Part 3 Section 2 and Part 5)
5. That the city use “Access, A Guide to Accessible Design for Designers, Builders, Facility Owners and Managers” published by the Universal Design Institute, University of Manitoba, as a reference when implementing Universal Design. Alternate resource materials may be utilized subject to approval by the Access Advisory Committee. (Appendix B – Part 3, Section 2)
6. That all new construction or major renovations of civic buildings and/or exterior environments, as well as transportation systems, will be reviewed to identify compatibility with Universal Design criteria as outlined in Appendix B - Part 3, Section 3.1 and 3.2.
7. That Corporate Finance, Materials Management Division review Appendix B - Part 3, Section 3.3 “Products” and work with the Universal Design implementation team to provide recommendations for an implementation plan.
8. Effective January 1, 2002, all new services and programs financed by any department in The City of Winnipeg will be reviewed for compliance with Universal Design criteria using the written Checklist. (Appendix B - Part 3, Section 3.4)

9. Information, such as written documents and announcements, website design, interactive communication processes, and oral and visual presentations, prepared by any department in The City of Winnipeg will take into consideration compliance with Universal Design criteria using the Checklist. (Appendix B - Part 3, Section 3.5)
10. The City of Winnipeg will institute a Universal Design review process as part of budget planning. This will be the responsibility of each department and will be done on a project-by-project basis. (Appendix B - Part 3, Section 4)
11. The City of Winnipeg will include Universal Design criteria when developing the program of requirements for its contracting and tender processes. (Appendix B - Part 3, Section 5)
12. All public meetings and community consultations will take place in accordance with universal design principles. (Appendix B - Part 3, Section 6)

Submitted by:
The Access Advisory Committee
Oct. 16, 2001

Appendix “B” referred to in Clause 4 of the Report of the Executive Policy Committee dated December 5, 2001



Universal Design Policy

Submitted By: The City of Winnipeg
Mayor's Access Advisory Committee

Date: October 16, 2001

Acknowledgements

To Gail Finkel for researching, formulating and writing the original Universal Design Policy, thank you for your extensive contribution.

To the members of The Inter-Organizational Access Committee (IOAC) who participated in developing this document, thank you. IOAC is a Winnipeg-based community committee comprised of organizational representatives and individuals that are interested in achieving environmental design that includes the functional range of our population.

Thank you to the members of the Access Advisory Committee and the civic administration for their efforts in adapting the policy to balance the needs of the community with the realities of civic government not only with respect to available resources but also as to how the city conducts business.

Table of Contents

PART 1: INTRODUCTION	8
GOALS:	8
BACKGROUND:	8
ADVANTAGES:	10
STAKEHOLDERS:	10
PART 2: STATEMENT OF INTENT	11
POLICY:	11
IMPLEMENTATION TEAM:	11
PART 3: METHODOLOGY	12
SECTION 1. EDUCATION	12
SECTION 2. CHECKLIST	12
SECTION 3. REVIEW PROCESS	14
3.1. BUILDINGS	14
3.2. EXTERIOR ENVIRONMENTS AND TRANSPORTATION SYSTEMS	14
3.3. PRODUCTS	15
3.4. SERVICES AND PROGRAMS	15
3.5. INFORMATION	15
SECTION 4. BUDGET SCREEN	15
SECTION 5. CONTRACTING AND TENDERING PROCESSES	15
SECTION 6. COMMUNITY CONSULTATIONS AND PUBLIC MEETINGS	16
PART 4: IMPLEMENTATION	16
PART 5: UNIVERSAL DESIGN CRITERIA	17
INTRODUCTION	17
RANGE OF HUMAN FUNCTIONING	17
STATEMENTS OF GOOD DESIGN	20
THE CHECKLIST	25
DEFINITIONS	28
PART 6: APPENDICES	29
A. ARTICLES ON UNIVERSAL DESIGN	29
B. CASE STUDIES	42
C. PROGRAMS	47
D. SOURCES FOR MORE INFORMATION	47
E. LETTERS OF SUPPORT	58

PART 1: INTRODUCTION

As we move into the new millennium, The City of Winnipeg will conscientiously provide leadership in thought and action by institutionalizing a commitment to creating a city that is truly inclusive of all citizens through endorsing and incorporating the concept of universal design.

Goals:

- To accept that the population in Winnipeg has a variety of different abilities, strengths, heights, etc. and that this should not exclude or segregate anyone from participating in community life and accessing and using municipal services.
- To reduce the need and costs associated with providing disability specific solutions by providing a generalized approach to design that accommodates a wider range of people.
- To ensure that new civic buildings, environments, products, services and programs are designed to be useable by a wide range of citizens.
- To promote a city that is comfortable, attractive, and inclusive.

Background:

Universal Design is a concept, or way of thinking about design. It is also known as Design for Aging and Intergenerational Design. Simply put, Universal Design creates environments that respond to the needs of the range of the population to the greatest extent possible. It is an evolution from accessible or barrier-free design to be more inclusive. The key is Universal Design focuses on a range of needs, not averages. Average based thinking left out huge segments of our population, and so naturally, relied on special design features to include people with disabilities.

Universal Design acknowledges that people come in various sizes, have various strengths, etc. There is no value judgement on these differences. It is as important to include a tall twenty-year-old as a senior, or a child, or a person who uses a wheelchair or someone with a hearing disability.

Universal design solutions are functional and create better design. Some designs have come from barrier-free design. An example is lever handles. While first advocated by people with limited hand dexterity, they are simply easier to operate. They work for a wide range of users. Since they are no longer seen as a barrier-free item, they have become marketable, readily available, and used in many environments simply as a better alternative.

There are four key components in the definition of universal design that requires further clarification. That definition is; Universal Design creates environments that respond to the needs of the range of the population to the greatest extent possible.

First, the word "design" in the term universal design refers to more than the built environment. We design systems, services, and policies, as well as buildings and landscapes. Universal Design will apply equally well to the design of parks, buildings, transportation systems, information services, recreation and social services, policies and by-laws.

Second, to clarify the phrase "range of the population," basic human functioning issues must be defined. Human factors include:

- Vision: from easy to not possible seeing with or without aids
- Hearing: from easy to not possible hearing with or without aids
- Dexterity: from easy to not possible coordinating eye-hand movements
- Upper Body Strength and Mobility: from easy to not possible lifting, gripping, or grasping
- Lower Body Strength and Mobility: from easy to not possible walking, standing, or rising
- Cognition: from easy to not possible remembering or understanding
- Communication: from easy to not possible speaking, reading, hearing
- Balance: from easy to not possible remaining upright
- Stature: from tall to short, wide to thin

The above list is a way of describing the human condition and understanding that range is not a description of one special group, but rather a continuum within each of us.

Third, in order to be able to design in a way that takes into account this range of functioning, Universal Design criteria (or statements of good design) have been developed. These include:

- Designs should be marketable: the same for all, cost viable, and saleable
- Designs should be flexible: accommodate a wide range of preferences and capacities
- Designs should be uncomplicated and understandable: easy to understand regardless of the user's experience, knowledge, skills, or concentration level
- Designs should be safe: minimize hazards and provides fail-safe features
- Designs should require only reasonable effort: can be used efficiently and comfortably
- Designs should be easy to access and use: provide for easily getting to, getting at, reaching, using, and handling objects and spaces.
- Designs should be sustainable: provides an appropriate use of resources and consideration of environmental issues, as well as user's sensitivity to particular materials

Fourth, the phrase "to the greatest extent possible" is used because the goal of designing for all people is very difficult to achieve. This qualifier is not meant to limit, but rather to provide the motivation to constantly strive to improve our environments to be more inclusive to more people.

A safeguard, to ensure that this greatest extent is truly inclusive, is the participation of stakeholders. Participation provides a vehicle to define the population, collect relevant information, open lines of communication, and to share decision-making.

Because of the difficulty of designing for all people, Universal Design does not negate the need for barrier-free or accessible design features. Though significantly more people will be accommodated through implementing universal design, at times there will still be individual needs that are not addressed. The costs and instances for these will be much less by incorporating the concept of Universal Design.

Advantages:

By thinking of our population as a collection of people who have differences, we accept reality. The City of Winnipeg is a community made of children, adolescents, adults, and seniors. They are different heights, weights, and have different strengths and abilities. This is not good or bad, it just is.

Given this fact, design should allow our environments to respond without having to constantly develop exceptions for special circumstances. If we think about designing for our population as they are, we design for a range rather than an average. As such, universal design has been described as designing for people from 8 to 80. For a city with a diverse population, this approach not only makes environments more comfortable for people, it will also reduce the need for expensive renovations. Environments should adapt to the people, rather than requiring people to adapt to the environments.

If design is both a process and a result, we have the ability to create systems and environments that will allow people to be more active participants in their community. Universal Design, if done properly, can be aesthetically pleasing and no more expensive than conventional design. A cornerstone of universal design is that it is marketable. As a result, it is better design, allowing people to maximize their role in their family and in society.

Stakeholders:

Citizens of all ages, socio-economic groups, and neighbourhoods will benefit by having environments and programs incorporate universal design principles. The differences in our stature and strengths know no cultural or economic bounds.

Businesses also have a stake in Universal Design. Universal Design, which is instituted in the facility and as a way of doing business, opens up new markets. Industry magazines and newsletters are now acknowledging Universal Design as a growing and important trend. Often these publications tie the need for Universal Design with the aging population. This new aging population is active, has disposable income, and is recognized as a valuable market.

And finally, politicians have a stake in implementing universal design. By responding to the growing demand of citizens for easy access to services and facilities, elected officials can be more responsive in appropriate ways.

PART 2: STATEMENT OF INTENT

Policy:

That the City of Winnipeg will ensure all new construction and/or major renovations to buildings, exterior environments, as well as purchases and new developments in services, products, or systems that are funded in whole or part by The City will follow Universal Design criteria. (See page 18 “Statements of Good Design”)

Implementation Team:

That the Chief Administrative Officer will establish an interdepartmental implementation team to steer this policy. This team would consist of representatives from the Access Advisory Committee and the following civic departments: Public Works, Planning, Property and Development, Winnipeg Transit, Corporate Finance – Materials Management, Corporate Services – Human Resources – Information Technology, the Equity and Diversity Co-ordinator, and any others deemed necessary. (Appendix B – Part 2, Statement of Intent: Interdepartmental Implementation Team)

In addition, each department will assign a departmental designate to be responsible for the implementation of Universal Design and provide an annual report to the Chief Administrative Officer and the Access Advisory Committee.

The City of Winnipeg Access Advisory Committee will provide an advisory role throughout the process.

PART 3: METHODOLOGY

Section 1: Education

It is vital that City of Winnipeg staff and elected officials become knowledgeable concerning universal design. As a result, there will be workshops on universal design and its implementation. Education sessions will be required at intervals specified by the inter-departmental implementation team. The Access Advisory Committee recommends the following:

- a) That education programs and/or initiatives be developed to meet the various needs of civic personnel.
- b) That departmental designates be responsible for ensuring staff training occurs.
- c) That Corporate Education work with the interdepartmental implementation team to develop education programs and tools for City of Winnipeg staff in the concepts of Universal Design. This may include designing new programs and tools or enhancing existing training programs, new employee orientation programs, a train the trainer program, E-training, video production, etc.
- d) That the Interdepartmental Implementation Team attends a one-day in-depth training session by March 2002.
- e) That personnel responsible for planning, design, materials management, etc. as determined by departmental directors attend an extensive 1–3 day training session on Universal Design with a trainer approved by the Access Advisory Committee.
- f) That designated departmental Universal Design personnel must attend a minimum of a one-day in-depth training on Universal Design with a trainer approved by the Access Advisory Committee.

Section 2: Checklist

That the Universal Design Checklist (see below) will become the worksheet for evaluations in the following Review Process. This form will be explained to staff in the educational sessions and will be used by the departments (See Part 5: Universal Design Criteria).

The Checklist provides a way to evaluate how well the design of a building or product or service meets the criteria of Universal Design. While it may be impossible to meet all criteria, the process of using the Checklist highlights areas that need further thought, ways to alter the design to be a better fit, and assist in making better decisions.

That the city use “Access, A Guide to Accessible Design for Designers, Builders, Facility Owners and Managers” published by the Universal Design Institute, University of Manitoba, as a reference when implementing Universal Design. Alternate resource materials may be utilized subject to approval by the Access Advisory Committee.

Universal Design Checklist©

©Actualizing Universal Design, Gail Finkel & Yhetta Gold, 1999 (permission to reproduce is granted to the City of Winnipeg)

Design under consideration:

Facilitator/Reviewer:

1. Range of Functioning

	Rating				Comments
Vision					
Hearing					
Stature					
Balance					
Cognition					
Lower body strength and mobility					
Upper body strength and mobility					
Communication					
Dexterity					
Life span					

2. Statements of Good Design

	Rating				Comments
Marketable					
Flexible					
Uncomplicated & Understandable					
Safe					
Easy to Use and Access					
Reasonable Effort					
Environmentally Sensitive					

3. Appropriateness and Actions to be Taken:

Section 3: Review Process

The City of Winnipeg will institute a Universal Design Review Process in each of the following areas.

3.1. Buildings

All new construction or major renovations of civic buildings will be reviewed to identify compatibility with Universal Design criteria. The designated departmental universal design staff person will be responsible to determine what changes are required using the written Checklist described in #2 above and then follow up as changes are made in the plans. A copy of the Checklist is to be maintained by the departmental designate and an annual update be provided to the Access Advisory Committee.

For projects estimated at \$250,000.00 or more, an outside consultant with expertise in design and universal design principles will be contracted by the City of Winnipeg to perform a detailed audit of the plans. The need for an outside consultant will be reviewed after the policy has been enforced for five years.

For projects ranging from \$100,000.00 to \$250,000.00 an external Universal Design audit is optional, however an internal Universal Design audit is required.

Universal Design considerations will be given to all projects less than \$100,000.00 without a formal audit process.

3.2. Exterior Environments and Transportation Systems

All civic exterior environments with planned new construction or major renovation, as well as transportation systems, will be reviewed to identify potential compatibility with Universal Design criteria. The designated departmental universal design staff person will be responsible to determine what changes are required using the written Checklist described in #2 above and then follow up as changes are made in the plans. A copy of the Checklist is to be maintained by the departmental designate and an annual update be provided to the Access Advisory Committee.

For projects estimated at \$250,000.00 or more, an outside consultant with expertise in design and universal design criteria will be contracted by the City of Winnipeg to perform a detailed audit of the plan. The need for an outside consultant will be reviewed after the policy has been enforced for five years.

For projects ranging from \$100,000.00 to \$250,000.00 an external Universal Design audit is optional, however an internal Universal Design audit is required.

Universal Design considerations will be given to all projects less than \$100,000.00 without a formal audit process.

3.3. Products

In cooperation with Corporate Finance, Materials Management Division, the interdepartmental implementation team will provide recommendations for the vetting of products ordered by any department in The City of Winnipeg for compliance with universal design criteria using the written Checklist described in #2 above. A copy of the Checklist is to be maintained by the departmental designate and an annual update be provided to the Access Advisory Committee. (See Section 5. Contracting and Tender Process)

When deemed necessary by the departmental universal design designate, the City of Winnipeg will contract a consultant with expertise in Universal Design and the field related to the product under consideration.

3.4. Services and Programs

Effective January 1, 2002, all new services and programs financed by any department of The City of Winnipeg will be reviewed for compliance with Universal Design criteria using the written Checklist described in #2 above. A copy of the Checklist is to be maintained by the departmental designate and an annual update be provided to the Access Advisory Committee. (See Section 5: Contracting and Tender Process)

When deemed necessary by the departmental universal design designate, the City of Winnipeg will contract a consultant with expertise in Universal Design in the field related to the service and/or program under consideration.

3.5. Information

Information, such as written documents and announcements, website design, interactive communication processes, and oral and visual presentations, prepared by any department in The City of Winnipeg will take into consideration compliance with Universal Design criteria using the Checklist described in #2 above. A copy of the Checklist is to be maintained by the departmental designate and an annual update be provided to the Access Advisory Committee. (See Section 5: Contracting and Tender Process)

When deemed necessary by the departmental universal design designate, the City of Winnipeg will contract a consultant with expertise in Universal Design and the field related to the product under consideration.

Section 4: Budget Screen

The City of Winnipeg will institute a Universal Design review process as part of budget planning. This will be the responsibility of each department and will be done on a project-by-project basis.

Section 5: Contracting and Tendering Processes

Services that the City of Winnipeg contracts with outside suppliers will comply with Universal Design criteria. The proposal call, application forms, and tender documents will include a statement from the supplier as to how Universal Design criteria will be met. The City of Winnipeg will include the Universal Design materials in Part 5 of this document as supplementary materials in tender calls.

Section 6: Community Consultations and Public Meetings

The City will ensure that community consultations and public meetings are compatible with Universal Design criteria using the Checklist described in #2 above. This includes but is not limited to:

- ensuring the location is accessible to people whether they can manage steps or not;
- the advertisements informing citizens of the meeting and any other information are available in multiple formats; and
- meeting proceedings are accessible to people who may not be able to hear an oral discussion.

PART 4: IMPLEMENTATION

The Universal Design Inter-departmental Implementation Team will be responsible for developing timelines, costing, and an implementation plan. It shall provide a Universal Design progress report to the City of Winnipeg Executive Policy Committee by December 2002.

PART 5: UNIVERSAL DESIGN CRITERIA

The following are excerpts from Actualizing Universal Design, by Gail Finkel and Yhetta Gold.

Introduction

Universal design includes. It does not exclude. The definition of universal design states that **design solutions should respond to the needs of the widest possible range of the population**.

To implement universal design a conceptual framework is provided that allows for problem solving. Universal design does not focus on dimensional requirements, but rather on a way of thinking through design issues. The following three sections provide this framework. First, a description of the range of functioning and its design implications is provided. Second there is a listing of Statements of Good Design, or principles of universal design, with examples. It is the combination of understanding human functioning and statements of good design that result in universally designed environments, products, and services. Lastly, a Checklist is provided to test how well a design or service meets these two components.

Range of Human Functioning

All individuals are a collection of various abilities. Different aspects are easier for one person than another. No factor is more important and the range within each does not place a value judgment of better or worse, but rather easy to not possible.

How do we know the requirements of the people we are designing for? We need a new language that identifies the wide scope of functioning without segregating groups of people. This understanding of the range of human functioning of all people is essential to the implementation of universal design.

The following list provides a catalog of human factors that design must consider. There is no right or wrong, there is just variability. Also included is a brief list of the design implications when designing for a population with a range of functioning. This list is not all-inclusive.

1. Vision

Range of Functioning:

Seeing is very easy to not possible with or without corrective lenses.

Design Implications:

- Sufficient font size
- Visual information provided in multiple formats
- Colour contrast maximized
- Sufficient lighting levels and glare is minimized
- Website design allows for multiple forms of interaction and adaptable equipment

2. Hearing

Range of Functioning:

Hearing is very easy to not possible with or without assistive aids.

Design Implications:

- Sign language interpreters or other assistive technology is available
- Audible information is provided visually
- Visual distractions are minimized

- Sufficient lighting levels

3. Stature

Range of Functioning:

A consideration of body types from tall to short, seated or standing, and thin to heavy.

Design Implications:

- Find common denominators for location of switches, handles, and mirrors where height is not an issue (i.e. no higher than 1200mm).
- Provide dimensional options for clear space, reach, and approach so that the space accommodates a person who is standing or seated or using an assistive aid.

4. Balance

Range of Functioning:

From high to low energy levels and from easy to not possible walking, remaining upright, or controlling of body movements, and one- and two- sidedness.

Design Implications:

- Limit amount of strength required
- Minimize distances
- Handrails are available
- Rest areas are available
- Space for walking aids
- Tasks can be performed with one hand

5. Cognition

Range of Functioning:

Very easy to not possible remembering, understanding, and making decisions.

Design Implications:

- Information is redundant and clear
- Visual or auditory distractions are minimized
- Appropriate acoustics
- Feedback is provided
- Assistance is available

6. Lower Body Strength and Mobility

Range of Functioning:

Very easy to not possible walking, sitting or rising, standing, stooping, kneeling, or climbing, with or without aids.

Design Implications:

- Mobility aids are accommodated
- Rest areas are available
- Handrails and grab bars are provided and reachable whether standing or seated
- Bending is not required

7. Upper Body Strength and Mobility

Range of Functioning:

Very easy to not possible reaching, lifting or holding, grasping or manipulating, and twisting or turning, with or without aids.

Design Implications:

- Reaching distances do not require stretching from a seated or standing position
- Devices are available to eliminate lifting and reaching

- Alternatives for grasping or twisting

8. Communication

Range of Functioning:

Speaking, understanding, or recognizing is very easy to not possible

Design Implications:

- Accommodations are available
- Size, colour, width, and height of font is appropriate
- Redundant cues are available
- Multiple cues are used

9. Dexterity

Range of Functioning:

Very easy to not possible performing manual tasks that requires hand-eye or two-hand coordination.

Design Implications:

- Alternatives for fine motor movement
- Alternatives for levels of co-ordination
- Space provided for assistive devices

10. Life Span

Range of Functioning:

A range of age and health factors evolving over time.

Design Implications:

- Provide physical and emotional comfort.
- Individual requirements concerning sensitivity and sustainability are considered.
- Flexible to changing needs.

Statements of Good Design

It is important to have a framework, a way of thinking about design. The combination of human functioning with the following Statements of Good Design (criteria of universal design) will result in better, more useable, and more comfortable designs.

1 - MARKETABLE

The design is saleable and available to a wide range of users.

Guidelines:

- The same for all or reasonable equivalent when not.
- Cost viability.
- Comfortable and pleasing features.

Example: Kathy

Kathy is a salesperson, who happens to be very short. She is tired of going into public washrooms and being unable to fix her hair, because the mirror is too high. A universal design feature is to place mirrors at a level that is just above the sink and be large enough that a standing taller person can use the mirror without bending.

This way standing users, whether tall or short, and seated users all have access to the same mirror.

It does not stigmatize shorter or seated people.

*It is an affordable solution and therefore provides equitable use.
It is tasteful and comfortable for all persons regardless of stature.*

2 - FLEXIBLE

The design accommodates a wide range of capacities and preferences.

Guidelines:

- Provides choice.
- Adjusts to changing needs.

Example: Les

Les had a stroke that has affected his right arm. Since his kitchen was universally designed he has been able to continue preparing his own meals. The single lever control at the sink allows easy one-handed operation. The roll out shelving provides comfortable access to items. In his bathroom, reinforcement was placed between the studs to allow the placement of grab bars. This has now proven to be of great value.

3 - UNCOMPLICATED and UNDERSTANDABLE

The design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- Arranges information consistent with its importance.
- Makes it easy to give and get instructions and offers timely feedback.
- Uses a variety of methods of presentation (pictorial, verbal, tactile).
- Provides adequate contrast.

Example: Juan

Juan is new to this country. His English is improving, but sometimes difficult. He bought a bookcase for his living room and has to assemble it. The directions are surprisingly easy, filled with simple, clear diagrams rather than words. The steps are clearly laid out and provide cues to ensure that each step was completed successfully before providing information on the next step. He was also able to get this information on a disc or tape if he so desired. He is able to have the bookcase finished and decorated quickly and with no hassles.

This is in contrast with his friend who speaks the language, but was given pages of directions that confused and frustrated every attempt to put a bicycle together. Each time he thought he had gotten it right, he would find that an error had been made four steps back and had to take the bike apart and start again.

4 - SAFE

The design provides security.

Guidelines:

- Arranges elements to minimize hazards and errors.
- Provides fail-safe features.
- Provides warnings of hazards.

Example: Daniel

Daniel's sight is not what it was a few years ago. Even with corrective lenses he has trouble reading any size print and distinguishing detail. He refuses to use a white cane as he walks through downtown.

Within the office building, there is a flight of stairs down to the lower level. Without a colour and texture contrasted warning strip he would not have noticed the stairs before being put in jeopardy.

5 - REASONABLE EFFORT

The design is used efficiently and comfortably.

Guidelines:

- Allows the user to maintain a comfortable body position.
- Minimizes repetitive actions.
- Minimizes sustained physical effort.

Example: Helen

Helen has had arthritis for a number of years. She has found many products to use that keep her involved in her daily routines. Examples include large tabs for medicine bottles, kitchen utensils designed with larger handles made of soft materials that adapt to her handgrip, and a telephone with speaker phone redial and memory.

6 - EASY TO USE AND ACCESS

The design provides for easily getting to, getting at, reaching, using, and handling objects and spaces.

Guidelines:

- Provides a clear line of access to important elements (sight, hearing, stance, etc.).
- Provides comfortable reach to all components for any seated or standing user.
- Accommodates variations in hand and grip size.
- Provides adequate space for the use of assistive devices or personal assistance.

Example: Simon

Simon uses a wheelchair. In a public washroom using universal design he finds the door is wide enough to easily enter and the lever door handle easy to operate. Instead of two doors in the entry to provide privacy for those inside the washroom, the wide path gently curves eliminating the need for a second door. The stalls are wide enough for him to enter, turn, and transfer onto the toilet. The accessories are logically arranged with the soap dispenser easily in reach of the sink with its one lever control and the paper towel dispenser at an approachable height with the disposal directly beneath it. It is not just Simon who appreciates this layout, but many others.

Fred has just finished his Christmas shopping and can fit through the stall doors with the packages and has room to place his items.

Ken has limited vision and with the arrangement of the accessories can easily locate and use them.

Sam hates walking around with wet hands to the paper towel dispenser and appreciates it is adjacent to the sink.

7 - SUSTAINABLE

The design provides appropriate use of resources and consideration of environmental issues.

Guidelines:

- Controls energy expenditure.
- Promotes the use of local resources.
- Promotes consideration of user's sensitivity to particular materials.

Example: Vera

Vera is planning her home with the intention of remaining in it the rest of her life. By including universal design into the planning, she will eliminate major renovations or having to move as her functioning changes over time (sustainability). Where possible she is using materials recycled from demolished buildings, which will increase the character she wants in her home. Since her children have a number of allergies, she is also concerned about out-gassing of products and is careful not to use glues and carpets throughout the interior.

The Checklist

The following form has been developed to evaluate how well a design meets universal design criteria. The criterion incorporates the range of human functioning with the Statements of Good Design (discussed earlier in this paper).

While it may prove very difficult to fulfill all aspects of universal design, using this form will highlight the strengths and weaknesses of the proposed design. The process provokes discussion to clarify how the design accommodates the range of functioning in our population and identifies who is accommodated and who is not. Though the process designs may need no changes, minor modifications, or major alterations all of which lead to ways to better address our population needs.

Instructions

1. Measure the design against the range of functioning in our population. Shade in the box next to each of the areas of human functioning, starting from left to right. Fill in only as much of the box as indicates how well this solution meets the range of needs within this area.
 - For example, if the solution under discussion is adding a ramp to a building, under vision not all of the box will be filled in. With low or no vision, there will be difficulty finding the ramp and there is a risk of falling. The group/team should thoroughly discuss all aspects of the solution and then decide how much of the box is appropriate to fill in. In this case perhaps 60% of the box will be filled in.

1. Range of Functioning	
	Rating
Vision	
	Comments
	Needs warning surface and colour contrast

- Comments made in the discussion as to how we may mitigate any potential problems should be noted in the comment section. Use this exercise to discuss who is included and who is excluded in this solution and why. Continuing with the example of a ramp, the group noted that with a warning surface and colour contrasting materials the danger may be mitigated.
2. Measure the proposed solution against the Statements of Good Design. Shade in the box next to each of the Statements of Good Design starting from left to right. Fill in only as much of the box as indicates how well this solution meets the concept.
 - Following the example given above, if a ramp addition is being considered it will be evaluated against the Statements of Good Design. The first issue is whether a ramp is marketable. Included in this statement is whether this design solution is saleable, viable in terms of cost, the same for all users, and comfortable and pleasing in appearance. In this case the group decides that it meets about 80% of those criteria.

2. Statements of Good Design	
	Rating
Marketability	
	Comments
	Needs landscaping to integrate into design

- Comments made in the discussion as to how we may mitigate any potential problems should be noted in the comment section. Use this exercise to discuss what statements are included and which are excluded and why. Continuing with the same example, the group feels the marketability would be 100% if the area around the ramp is landscaped. This solution makes the design more attractive and integrated into the design of the site. The box would be filled in most of the way starting at the left and the comment about landscaping would be noted in the comment section.
3. Compare the results after all of questions #1 and #2 are done. From this information a decision can be made on the appropriateness of the solution and/or which comments must be incorporated to make the solution conform to maximizing the range of functioning and the statements of good design.
 4. In large designs this process may need to focus on a number of individual issues and be repeated. For example in a large building, the entry, reception, offices, washrooms, lunchroom, etc. may need to be reviewed separately.

Universal Design Checklist©

©Actualizing Universal Design, Gail Finkel & Yhetta Gold, 1999 (permission to reproduce is granted to the City of Winnipeg)

Design under consideration:

Facilitator:

1. Range of Functioning

	Rating				Comments
Vision					
Hearing					
Stature					
Balance					
Cognition					
Lower body strength and mobility					
Upper body strength and mobility					
Communication					
Dexterity					
Life span					

2. Statements of Good Design

	Rating				Comments
Marketable					
Flexible					
Uncomplicated & Understandable					
Safe					
Easy to Use and Access					
Reasonable Effort					
Environmentally Sensitive					

3. Appropriateness and Actions to be Taken:

Definitions

Universal Design: Design solutions that respond to the widest range of the population possible. Concerned with broad marketing by meeting the requirements for children through to seniors, people with or without disabilities, and without stigmatizing or identifiable aesthetics. Some special design features will still be required, but more limited in scope. Also known as Trans-generational Design, Life Span Design, and Design for All.

Design: Refers to a creative process that is used when developing something new. The scope goes beyond the term that is frequently understood as the purview of architects, and interior and industrial designers. Individuals design their lives, community groups design strategies and programs, governments design policies and laws, service providers design programs, etc.

Environment: Includes all those things that surround us; buildings, work places, recreational centres, products, services, transportation systems, etc.

People: The broad range of individuals who compose our population

To reduce confusion with other design terms the following is offered to clarify what universal design is and is not:

Accessible or Barrier-free Design: Unlike universal design these terms refer to specific solutions for specific disability types.

Adaptable or Flexible Design: Easily adjusted or renovated to meet individual needs, usually related to housing and disability related needs.

Part 6: Appendices

A. Articles on Universal Design

Excerpts from

The Concept of Universal Design

Copyright © E. Steinfeld 1994

By Edward Steinfeld Professor of Architecture, Director, Center for Inclusive Design & Environmental Access State University of New York at Buffalo

Universal Design is different than accessible design. Accessible design means products and buildings that are accessible and usable by people with disabilities. Universal design means products and buildings that are accessible and usable by everyone, including people with disabilities.

Although these different definitions appear to be simply semantic, they actually have significant differences in meaning. Accessible design has a tendency to lead to separate facilities for people with disabilities, for example, a ramp set off to the side of a stairway at an entrance or a wheelchair accessible toilet stall.

Universal design, on the other hand, provides one solution that can accommodate people with disabilities as well as the rest of the population. Moreover, universal design means giving attention to the needs of older people as well as young, women as well as men, left handed persons as well as right handed persons.

An entrance that is designed to be "universal" would not have stairs at all. Instead of only one toilet stall designed for people who use wheelchairs, a toilet room with a universal design might include more than one stall with larger space clearances and perhaps additional facilities such as a changing table for babies. Instead of providing accessibility to only a men's and a women's toilet room there might also be a "family" toilet room, one in which men can take their young daughters or older mother and women can take their young sons or older father without embarrassment. This bathroom could also accommodate people with a wide range of physical limitations.

Over the last several years there has been a growing interest in universal design as an alternative to accessible design. Why has this occurred? In the highly developed countries there are several reasons:

- An increase in the number of survivors of disability
- Increasing life spans
- Increasing purchasing power among the population with disabilities
- Development of a "grey market"
- Recognition of the inadequacies of assistive technologies
- Products and environments that were not designed with old people in mind.

Data from the United States illustrates these trends. Between 1970 and 1980, the number of people with disabilities increased by 50%. This can be attributed to improvements in medical technology and health care practice. People with disabilities themselves are living longer and the growth of the older population, particularly the "older old" has been rapid. It is estimated that, by the year 2030, 20% of the population in the U.S. will be over 65.

The purchasing power of people with disabilities is significant. It is estimated that 36 million disabled people in the U.S. spend 40 billion dollars on special products. As they become integrated into general

community life, hold jobs and earn more money, they are beginning to exert influence on design of mass marketed products. One of the most significant social trends has been the development of the "grey market." Consumers over 65 have the highest discretionary income in the U.S. It is estimated that the population over 50 years of age, which includes most middle age people as well as the aged, amounts to an \$800 billion market. This group controls 56% of all discretionary income. For example, they purchase 60% of all domestic cars and own 50% of all homes.

Despite the increasing economic power of the older population and people with disabilities, there are many gaps in the market place. Many special products, i.e. assistive technology, are Band-Aid approaches to deficiencies in general consumer product design. The same can be said about accessibility features in public buildings or "adapted" housing. Research on consumer acceptance of assistive technology has demonstrated that people do not like the medical/technical appearance of these products. They are also too expensive, hard to find, unreliable and difficult to repair. Perhaps one of the most significant limitations is that consumers see them as stigmatizing; "special" products and environments promote a negative self-concept.

Increasingly, the proponents of disability rights and design professionals have come to realize that the concept of accessible design has to be rethought. Consumer products and environments have been designed for Peter Pan and his friends, people who never grow old and live in Never-Never-Land. The challenge now is to change the way we think about design of all products and environments.

It is important to note that the term universal design does not imply that everything in this world be fully usable by everybody. As we shall see, the term refers more to a goal to be reached and an attitude rather than a strict absolute. The less developed countries share some of the same trends as the highly developed countries. They also are experiencing an increase in survivors of disabilities and, in some cases, increasing life spans. However, in these countries, assistive technology is much more costly and hard to find. In some countries it is simply outside the reach of most people in the population. These countries have a need to control public welfare costs as well; moreover, the stigma of disability can be much greater. For these reasons, universal design makes a great deal of sense as an alternative to accessible design because it can be more generally available at lower costs than assistive technology or specialized settings.

With the advent of an independent living movement in the less developed countries, there is an opportunity to avoid the trap of special products and special places. Universal design also presents an opportunity for economic development. The creation and production of consumer products that are easier to use for everybody can improve competitiveness in the world export market. Moreover, the development of a public infrastructure, cultural and recreational sites that are usable by all can improve tourism and contribute to general economic welfare.

The first step in operationalizing the universal design philosophy is designing for a broader range of people. Whereas accessible design is often focused on the needs of people who use wheelchairs or have visual impairments, universal design should consider other differences as well. This may include differences in strength, intellectual abilities, perceptions and values. For example, universal design of signs at an airport terminal would include response to travelers who do not speak the native language of a country.

Broadening the target population for design can be achieved in two ways. First, individual designs can "forgive" limitations and abilities. For example, a door handle should be designed for ease of use by a variety of different grips. Second, products and environments should be designed to adapt to a range of abilities. So, for example, the walls surrounding a bathtub can be designed to support grab bars

wherever they are needed. In this way individuals can install grab bars in places that are best for them. The first approach requires building in certain design features from the start.

The second approach, however, allows for a range of adaptation depending on individual and household needs. The initial level of usability might actually be lower than "accessible design" but the range of adaptation would be greater. An important implication of universal design is that it has mass appeal. Accessible design often has a medical or institutional appearance. The lack of good aesthetics often leads to "technology abandonment" on the part of the consumer or negative attitudes towards accessibility on the part of building owners or designers.

To ensure that universal design will be accepted, it must have a high standard of aesthetics. In fact the most successful universal designs often express the usability features of the product or environment as strong aesthetics qualities and are successful precisely because they are beautiful as well as useful. Of course, universal design must be usable and accessible by people who have disabilities.

Four principles can help to assure that this goal will be achieved:

- insuring a wide range of anthropometric fit
- reducing energy expenditure
- clarifying the environment
- using the systems approach

Products and environments should be usable within the comfortable reach of the intended users, including those who are seated and those who are standing. Circulation clearances and environments should be large enough to accommodate wheelchair and walking aide users. Grip sizes and clearances should be within the range abilities of people who have limited grip or have to use alternatives to the standard grips.

Often we think that accessibility can be achieved best through larger spaces; however, reducing energy expenditure is often just as important as providing enough clearance for wheelchair movements. In particular, older people need an environment that eliminates unnecessary expenditure of effort. This can be achieved by organizing space and designing devices to simplify the tasks of using them and may mean keeping spaces from getting too large. Useless movements should be eliminated.

Hands-free operation can be an excellent way to reduce energy expenditure. Operating forces on controls and hardware should be kept to a minimum. Finally, products and environments should be designed to reduce bending and stretching.

The legibility of the environment and products are critical to their successful use. Clarifying the environment includes the use of color and texture contrasts to identify different controls or improve the perception of spaces. Enough light should be provided to see things easily and glare should be kept to a minimum. Clarifying the environment also involves simplifying cognitive tasks associated with perception and operation of devices. This can be achieved by making the way things work visible, providing "information in the world" instead of requiring people to memorize operations. Natural mapping should be used to make the relationship between controls and their effects more understandable.

Providing redundant queuing, for example visual signals as well as audible signals, reinforces communication about the operation of devices. In general, the level of technology should be kept as simple as possible and good feedback for the effects of one actions should be provided.

Universal design does not necessarily mean that the product or environment is designed to be usable by all people from the beginning. The systems approach can be used to provide an adaptable environment, one that can be easily adjusted to meet the need of any person. There are many ways to accomplish this.

Interchangeable parts allow for substitution of features to accommodate different levels of ability or different ways to use a device or place. For example, most computer systems allow the interchangeable use of several input devices, e.g. track ball, mouse keyboard, joy stick or laser pointer. Another approach to adaptability is the use of add-on options. For example, a bathtub that could have fittings that allow the installation of grab bars or seats. A consumer could purchase the basic bathtub first. As they got older, they could buy additional options that easily attach to the tub. The design of a system with uniform aesthetics would reduce the negative connotations associated with typical bars and seats.

Another important aspect of the systems approach is the interface of mass market products with assistive technology. A good example is the design of a telephone headset that can be usable with a TDD. There are many good examples of universal design.

Though we do not endorse the language used in this article, many important points are raised.

Excerpts from

Thirty-Something (Million): Should They Be Exceptions?

Gregg C. Vanderheiden

Trace Research and Development Center, Waisman Center and Department of Industrial Engineering,
University of Wisconsin-Madison

There are over thirty million people in the U.S. with disabilities or functional limitations (of which a major cause is aging), and this number is increasing. An examination of the role of human factors in addressing this population is presented which would include both special designs for disability/aging and the incorporation of disability/aging into mainstream human factors research and education.

Statistics regarding the size and characteristics of this population are presented, including the costs of disability. Examples demonstrating the economic and commercial feasibility of incorporating disability/aging considerations in mass market designs are provided along with a discussion of the benefits to non-disabled users.

Introduction

Many nations are becoming more aware of the large numbers of persons with disabilities and the problems they face. This group includes those born with disabilities and those whose abilities diminish during their lifetime through disease, accident or aging. Recent Federal legislation in the United States, primarily Section 508 of Public Law 99-506 and the Americans with Disabilities Act, addresses accessibility problems faced by persons with disabilities in the workplace and community. In addition, the demographic trend toward a growing elderly population (particularly as the "baby boom" generation ages) is raising the prospect of a large number of consumers with decreasing abilities. The serious impact this will have on mass market products is beginning to be recognized by manufacturers.

These developments have sparked increased discussion within the human factors community. There is little question that human factors research and principles can be a benefit to those who are designing special devices for persons with functional limitations. However, the open question is, "Should the mainstream design of products include consideration of people who have disabilities or are elderly?" (In other words, should mass market products be made more accessible via their initial design?)

It is easy to answer this question in the affirmative from a humanitarian standpoint, yet this is likely to represent a major change in scope for the human factors field. The specific role of human factors with regard to design for disability/aging is yet to be determined. Such a change must also be well considered in terms of effects on personnel, curricula and economic perspectives.

It is useful to break this complex question into the following component questions:

- Who is included in the category of "disabled and elderly persons"?
- How large is the disabled and elderly population?
- Can't the needs of disabled or elderly persons be handled separately or as exceptions?
- What can the human factors field do for this group?
- Is it economically and practically feasible to include disabled and elderly persons in the design process for mass market products?
- What are the "benefits" of incorporating disability and aging considerations into mainstream human factors activities?
- What are the "costs"?

Who Is Included in the Category of "Disabled and Elderly Persons"?

It is important to understand that there is no clear line between people who are categorized as "disabled" and those who are not. A performance or ability distribution for a given skill/ability is generally a continuous function, rather than bimodal with distinctive 'able' and 'disabled' groups. This distribution includes a small number of individuals who have exceptionally high ability, a larger number of individuals with mid-range ability, and another longer tail representing individuals with little or no ability in that particular area. In looking at such a distribution, it is impossible to simply draw a vertical line and separate able-bodied from disabled persons. It is also important to note that each aspect of ability has a separate distribution. Thus, a person who is poor along an ability distribution in one dimension (e.g., vision) may be at the other end of the distribution (i.e., excellent) with regard to another dimension (e.g., hearing or IQ). Thus, individuals do not fall at the lower or upper end of the distribution overall, but generally fall into different positions depending upon the particular ability being measured.

The 95th Percentile Illusion

It should be clear that even if elderly and disabled persons are included in the mainstream design process, it is not possible to design all products and devices so that they are usable by all individuals. There will always be a "tail" of individuals who are unable to use a given product.

In order to include a sizeable portion of the population in the category of "those who can use a product with little or no difficulty," the 95th percentile data are often used. The problem is that there are no "95th percentile" data for specific designs. Rather, there are only data with regard to individual physical or sensory characteristics. Thus there is 95th percentile data for height, a 95th percentile for vision, hearing, etc. As a result, it is not possible to determine when a product can be used by 95% of the people. It is only possible to estimate when a product can be used by 95% of the population along any one dimension. Since people in the 5% tail for any one dimension (e.g., height) are usually not the same people as the 5% tail along another dimension (e.g., vision) (Kroemer, 1987), it is possible to design a

product using 95th percentile data and end up with a product that can be used by far less than 95% of the population.

To illustrate this phenomenon, imagine a mini-population of ten individuals. Ten percent of them (1 of 10) have one short leg, 10% have a visual impairment, 10% have a missing arm, 10% are short and 10% cannot hear.

Let's assume that we design a product that required 90th percentile ability along each of the dimensions of height, vision, leg use, arm use and hearing. In this instance we would end up with a product which was in fact only usable by 50% of this population. This occurs because, although only 10% of this mini-population is limited in any single dimension, different individuals fall into the 10% tail for each dimension and only 50% of the population is within the 90th percentile for all five areas.

In real life, the effect is not quite this dramatic, and its calculation is not so simple. First, the percentage of individual with disabilities is less than 10% along any one dimension. Secondly, there is often overlap where one individual would have more than one disability (elderly individuals, for example).

On the other hand, there is a much wider range of different individual types of disability. In addition, the data from which the 95th percentiles are calculated often exclude persons with disabilities (Kroemer, 1987), making the percentage who could use the design(s) smaller than one would first calculate.

How Large is the Disabled and Elderly Population?

Determining the exact number of individuals with disabilities or with limitations due to aging is difficult. Estimates vary depending upon the definitions of disability used and the sources of the data. There is also a substantial number of individuals with disabilities who have returned to the work force despite significant functional limitations and who therefore do not consider themselves disabled. Their functional limitations, however, must be taken into account when they are trying to perform within an environment of facilities and tools designed for "normal" or 95th percentile function.

To further confuse efforts to understand the makeup of this segment of our population, most of the data reported overlap. That is, the same individual may be counted in both the visually impaired and hearing impaired segments. Adding the two numbers together would give a false reading of the size of the "hearing or visually impaired" population. For example, in one study the incidence numbers are reported as shown in Table 1 (based on data from National Center for Health Statistics, 1979, as reported in Czajka, 1984).

Table 1: Prevalence of Selected Impairments in the United States

	All Ages	Over 65
Impairments (vision, hearing, etc.)	20.3%	50.1%
Circulatory conditions	21.7%	63.8%
Respiratory conditions	26.2%	35.0%
Skin and musculoskeletal conditions	25.5%	57.4%
Other chronic conditions (diabetes, urinary, other)	27.8%	30.5%

Based on recompilation of data from Czajka (1984). Source: National Center for Health Statistics, 1979 and 1980 National Health Interview Survey

If you add the numbers in Column 1 of Table 1 together, you get 121% of the population (all ages). Adding the numbers in Column 2 gives you 236% (of the 65+ population). Clearly these numbers are not exclusive of each other. It is therefore important to differentiate incidence figures for single types of impairment from "total person" counts. In the latter case one must verify that the figures used are mutually exclusive before doing any adding. It is also important to note from this that many individuals will have multiple impairments, and solutions targeted at a single disability may not be useful to them. For example, 75% of people with speech impairments report other impairments, as do 73% of those who are blind, 71.4% of those with complete paralysis of the extremities, 70.4% of those with glaucoma, 55.4% of those who are deaf in both ears, and 38.6% of persons with hearing impairments other than deafness (National Health Interview Survey 1983-85; in LaPlante, 1988).

Finally, it is important to distinguish between the number of people that have an impairment and the number with a functional limitation. Impairment is a function of the basic capabilities (or lack thereof) of the individuals themselves. Functional limitation is a reflection of the interaction between these impairments and the design (physical, social, etc.) of the world around them. Safer designs might somewhat reduce the number of injuries and therefore the impairment figures. The greater potential for reducing these figures, however, is in reducing the number of people with functional limitations through better design of products, environments and systems. In this paper, both impairment and functional limitation figures are presented. In each case they are labelled as impairment or limitation as well as single dimensional (overlapping) or non-duplicative.

Though individual estimates vary, it appears that there are over thirty million people in the United States who are disabled or have functional limitations due to injury, illness or aging (Kraus & Stoddard, 1989). This is something between 12% and 20% of the population. Many of these individuals also have multiple disabilities....

Can't the Needs of Disabled and Elderly Persons Be Handled Separately or As Exceptions?

Although the total number of elderly or disabled persons is large, each individual disability or impairment area represents only a small portion of the population. We are therefore not dealing with one large group of people but with many small groups which together represent a major portion of our population. This raises a question as to the most effective means of addressing these problems. Is it better to design everything so that it is accessible to most persons, including those with disabilities? Or is it more effective to design for the able bodied population and create special designs for persons with specific types of disability?

First we must start with the understanding that it is impractical, if not impossible, to design everything so that it is accessible by everyone regardless of their limitations. Some things have inherently limited usefulness to some populations (e.g., a stereo system for deaf individuals, or a kaleidoscope for blind persons), and accessibility for these products for those disabilities is less of an issue. There are also combinations of impairments which would make adaptation difficult to do on a standard basis (e.g., a deaf-blind-aphasic individual). However, for most types or degrees of impairment there are simple and low cost (or no cost) adaptations to product designs which can significantly increase their accessibility and usefulness to individuals with functional impairments. In these cases, inclusion of the design feature or approach in the standard product can be of substantial benefit to the individual and society as a whole (see further discussion in next section).

Another argument for incorporating accessibility directly into the design of mass market goods stems from the population distribution characteristics of elderly and disabled persons. As shown earlier, the number of persons with disabilities overall is large, but those with specific types of impairment represent a small portion of the total population. These small groups are further divided by the degree of

limitation. People with mild hearing loss, for example, would use different techniques and aids from those with severe hearing loss. Thus, the target user groups are too small to be addressed individually. They are also geographically distributed across the U.S. As a result it is both economically impractical and a marketing and support nightmare to design individual appliances (stoves, microwave ovens, mixers, vacuum cleaners, cars, etc.) for each population. Finally, due to aging and other causes, we are all at risk of having to operate our appliances with diminishing functional capabilities over time.

We are therefore left with a balancing act. It is unreasonable to design everything so that it can be used by everyone. It is equally unreasonable to produce special designs for each major consumer product to accommodate the different disability groups. Some special aids and other devices will continue to be necessary to fulfill those needs that accessible mass market design cannot effectively meet. But where mass market goods can easily be made more accessible through careful and informed design, it appears to be the best and most economical approach....

Is It Economically and Practically Feasible to Include Disabled and Elderly Persons in the Design Process for Mass Market Products?

Experience so far has shown that consideration of disabilities and functional limitations in mainstream design is very definitely feasible from both an economic and practical standpoint. In the majority of cases, accessibility can be added to a product's design for little or no cost.

For example, Apple Computer has incorporated several special features directly into their standard operating system to accommodate individuals with various disabilities. One feature, called "Sticky Keys," allows individuals who only have one hand available or who use a head or mouth stick to operate the standard keyboard. Ordinarily, a person typing with a single finger or stick cannot use a keyboard, since it requires that you hold down two or more keys simultaneously for some operations (e.g., control-g or alt-h). The "Sticky Keys" feature allows the person to type the keys sequentially rather than concurrently. It is activated by tapping five times on the shift key and deactivates should any two keys be depressed simultaneously (as a normal typist would). Thus, the feature is transparent to those users who don't need it.

Another feature now standard on Macintosh computers is called "Mouse Keys." Individuals who do not have the motor control necessary to operate a mouse can use the "Mouse Keys" feature to control the mouse cursor on the screen by using the keys on the numeric keypad. A third feature is "Close View," which allows individuals to enlarge the screen image up to 16 times its normal size. Thus visually impaired individuals may use the computer without special add-on devices.

All of the above features have been standard on all Macintosh computers for the past two years. Once the features were developed, the cost to include them in the product was essentially zero. The "Sticky Keys" and "Mouse Keys" features take up just 4k of space on the disk and are included in every system shipped. The "Close View" feature is just 20k and is included in the package of system disks shipped with each computer. Even when these same features had to be incorporated directly in the hardware (as they did for the Apple IIGS), the manufacturing cost was negligible (since it simply changed the code in the microcontrollers for the keyboard). Although Apple Computer has taken the early lead in this area, other major computer manufacturers and operating system developers have similar features under development.

Another example of no-cost accommodations can be found on some mass market mixing bowls. These bowls have small braille legends cast onto the underside of the bowl, listing the capacity in braille. Other than a few seconds to cut the dimples into the original mould, there is no additional cost involved in making the bowls. Some microwave manufacturers also offer braille/tactile overlays for their control

panels to facilitate their use by blind or visually impaired users. US Sprint has a braille version of its FONE cards.

Accessible Design Can Sometimes Decrease Costs:

In some cases, creating a design which is more accessible can in fact decrease the costs involved in manufacture or maintenance/support of a product. One example is to be found in elevator design. Individuals in wheelchairs or on crutches had great difficulty with the large "banks" of elevators present in many buildings. Often the elevator door would open, but before the person in a wheelchair could get to the correct elevator, the door would close. An obvious solution would be for the elevators to stay open for a longer period of time. However, building codes required that a building's floors be visited by the elevators with a specified frequency. If the doors were made to stand open longer, additional elevators would need to be installed in the building to meet the level of service standards. In a building like the Sears Tower, this could result in a substantial portion of the building being consumed by elevators.

On examining the problem more carefully, however, it was noted that the problem was not that individuals in wheelchairs or on crutches were unable to enter an elevator within the time the door normally remained open. The problem was knowing which elevator was coming so they could position themselves in front of its door. By simply reprogramming the elevator's controlling computer it was possible to have the elevator activate the signal tone and light for the proper elevator in advance of its arrival at the floor.

Adopting this advance warning as a standard for elevators solves the accessibility problem without increasing costs. In addition it was found that both disabled and able-bodied persons were able to board the elevator much more rapidly when this advance warning was given. As a result, it was then possible to either decrease the number of elevators and still provide the same level of service to the floors, or to increase the level of service, since the time the elevator is open on a floor could be reduced. Thus, the more accessible design turned out to be less expensive overall.

Disability Design Can Increase the Functionality for Able-Bodied Users:

It is very common for accessible designs also to prove beneficial for individuals who do not have limitations (Newell & Cairns, 1987). In the elevator example above, the advance warning not only increased the speed with which the elevators could service the floors, but also made it much easier for normal passengers to manoeuvre their luggage and board the elevator (i.e., without having to grab one bag and throw it into the elevator door while they retrieved their other bags from in front of the wrong elevator).

Probably the most common example of accessible design is the curb cut. Although the curb cuts are put in for persons in wheelchairs, it is estimated that for every individual in a wheelchair using a curb cut, somewhere between ten and one hundred bicycles, skateboards, shopping carts, baby carriages and delivery carts use the curb cut. It is also not uncommon to see individuals walk slightly out of their paths in order to walk up a curb cut rather than stepping up onto the curb, indicating a preference for the curb cut even when walking.

The "Mouse Keys" feature on the Macintosh computer provides another example. In addition to allowing the user to move the cursor across the screen, the "Mouse Keys" also have a "one pixel" feature. Tapping specific keys on the numeric keypad causes the mouse to move one pixel in the corresponding direction. As a result, it is possible to very precisely position the mouse on the screen.

Since the normal mouse continues to be active at all times, it is possible for an able-bodied individual to use the regular mouse for general pointing movements and to move the mouse into the approximate area of interest. He/she can then reach over and tap on the numeric keypad keys (with "Mouse Keys" activated) in order to nudge the cursor the exact number of pixels required for precise positioning. Thus, the "Mouse Keys" feature adds functionality and a precision of movement which was not previously available to able-bodied users.

A real-time Palentype (similar to stenotype in the U.S.) translation aid was developed in England to allow a deaf member of Parliament to follow floor debates more easily and precisely. It later found its way into the courtroom or lawyers who could hear normally but wanted transcripts of the day's trial (Newell et al., 1984).

In general, when products, environments or systems are made more accessible to persons with limitations, they are usually easier for more able-bodied persons to use. Some of the potential benefits include lower fatigue, increased speed and lower error rates.

The Consequences of Not Providing Accessible Designs:

The benefits above are only half of the economic justification for more accessible design. A second and perhaps more significant economic benefit would be reduction of the costs to society which result from individuals being unable to effectively function independently in the world as it is currently designed. These costs take the form of benefits paid out of tax dollars for special assistance due to a disabled person's unemployment or non-independent living. In addition, there is the loss to society of these individuals' productivity (meaning loss of tax revenues, creation of wealth, and contributions to society).

Overall disability expenditures in the U.S. rose approximately linearly from 50 billion dollars in 1975 to 170 billion dollars in 1986 (Berkowitz & Greene, 1989). Assuming this trend continues, the outlays for 1990 are estimated to exceed 200 billion dollars, as shown in Figure 6. Approximately half of the 1986 cost was for medical treatment, while the other half was for direct transfer payments. (Transfer payments are the actual funds allocated each year to people because of disabilities.) Other economic losses from disability (not including transfer payments) are estimated to have been in excess of 177 billion dollars in 1980 (Chirikos, 1989) (equivalent to 290 billion dollars in 1990 dollars).

Approximately one-third of the persons with disabilities who can and would like to work are unemployed. This amounts to approximately two million people (Kraus & Stoddard, 1989). Figuring an average annual salary of \$15,000, that amounts to 30 billion dollars in lost productivity, as well as several billion dollars in lost tax revenues. This is in addition to the large costs in the form of transfer payments made to those individuals who cannot live independently.

What Are the "Benefits" of Incorporating Disability and Aging Considerations into Mainstream Human Factors Activities?

As we have seen, considering those with functional limitations in the overall design process is good for the design process overall. Design which is more accessible to persons with disabilities typically can benefit able-bodied users as well by reducing fatigue, increasing speed and decreasing the number of errors made. As in the elevator example, consideration of disability issues can also cause us to see design issues more clearly, leading to new insights and better overall design.

Creating more accessible designs can also increase the market for many consumer products. With increasing awareness of the accessibility issues, people are beginning to look for more accessible designs. The U.S. government, for example, has recently passed legislation (Section 508 of Public Law 99-506) requiring that the General Services Administration develop accessibility guidelines that should

apply to all future electronic office equipment acquisitions (purchase or lease). Similar measures are being examined by other countries as well as many school systems and state governments in the U.S.

Accessibility features should begin to provide a market edge even in the home market. Although only one in five or six individuals in the United States has a significant functional limitation, a much higher percentage of households have individuals who have functional limitations. Products purchased for use in a household that has even one member with a disability may be more attractive if their design is more accessible. More accessible design will also increase the useful product life of many products purchased by or for individuals who are aging.

Finally, as noted above, there are tremendous potential economic benefits from making it easier for individuals with functional limitations to live more independently and become or remain employed.

What Are The Costs?

The most significant cost involved in considering functional limitations in mainstream design is that of building the necessary knowledge and skills in our human factors researchers, educators, and practitioners. Before we can include the disability aspects in mainstream research and teaching, we must considerably expand our knowledge base and experience in these areas. This is difficult for most professionals, who already have difficulty keeping up with the literature.

In order to include design for persons with functional limitations in our college curricula, we will need to expand the already overcrowded content of our courses and/or add courses to the already difficult coursework requirements for our students. Since incorporating individuals with limitations in our standard design process does not eliminate the need for custom design of special aids, we must also somehow address custom design for disability to cover the needs that cannot be met through more accessible mass market design.

Conclusion

Incorporating disability considerations in our research and teaching will require substantial effort both as individuals and as a field. Before we can effectively incorporate disability and aging issues into our curriculum we will need to better define and refine this area. The basic principles involved in accessible design need to be explored and defined. More specific data regarding the different areas of impairment as they relate to design need to be gathered, condensed and made available to researchers and designers. Some design guidelines exist (Lifchez & Winslow, 1979; Sorenson, 1979; Newell, 1987; Newell & Cairns, 1987; Calkins, 1988; Vanderheiden, 1988; Enders & Hall, 1990; Mueller, 1990) but much more work is needed in the delineation and documentation of the basic principles of accessible design.

It seems apparent, however, from the demographics and trends in our population, that for an increasing number of the professionals and educational programs in human factors, design for disability and aging must merge with, and become a continuum of, the normal design process. Aside from the significant benefits to society, these efforts should also make our field more robust and lead it into new directions and to new insights.

Acknowledgements

This work has been supported in part by Grant H133E80021 from the National Institute on Disability and Rehabilitation Research.

References

Berkowitz, M., and Greene, C. (1989). Disability expenditures. *American Rehabilitation*, Vol. 15, No. 1, Spring, 7-29.

Calkins, M. (1988). Design for dementia: Planning environments for the elderly and confused. Owings Mills, MD: National Health Publishing.

Chirikos, T.N. (1989). Aggregate economic losses from disability in the United States: A preliminary assay. *The Milbank Quarterly*, Vol. 67, Suppl. 2, Pt. 1, 59-91.

Czajka, J. (1984). Digest of data on persons with disabilities. Washington, DC: National Institute on Disability and Rehabilitation Research, US Department of Education. Prepared by Mathematical Policy Research, Inc. under contract from NIDRR.

Enders, A., and Hall, M. (Eds.) (1990). Assistive technology sourcebook. Washington, DC: The RESNA Press.

Kraus, L. E., and Stoddard, S. (1989). Chartbook on disability in the United States: An Info Use Report. Washington, DC: National Institute on Disability and Rehabilitation Research, US Department of Education.

Kroemer, K.H.E. Engineering anthropometry. In Salvendy, G. (ed.). 1987. *Handbook of Human Factors*, 154-168. New York: Wiley.

LaPlante, M.P. (1988). Data on disability from the National Health Interview Survey, 1983-85: An Info Use Report. Washington, DC: National Institute on Disability and Rehabilitation Research, US Department of Education.

Lifchez, R., and Winslow, B. (1979). Design for independent living. New York: Watson-Guptile Publications.

Mueller, J. (1990). The workplace workbook: An illustrated guide to job accommodation and assistive technology. Washington, DC: The RESNA Press.

Newell, A.F., Downton, A.C., Brookes, C.P., and Arnott, J.L. (1984). Machine shorthand transcription used as an aid for the hearing impaired and in commercial environments. *Proceedings of the International Conference on Rehabilitation Engineering*, Ottawa, June 1984, 559-560. Washington, DC: RESNA.

Newell, A.F. (1988). A strategy for coordinated research into ordinary and extraordinary human-computer interaction. March 31, 1988. Position paper prepared for the Department of Trade and Industry, United Kingdom.

Newell, A.F., and Cairns, A.Y. (1987). Human interface studies and the handicapped. *Proceedings of the British Computer Society Disabled Specialist Group Third Conference*. London, 25 November 1987, pp. 285-289. Cambridge, England: Cambridge University.

Salvendy, G. (ed.). 1987. *Handbook of Human Factors*. New York: Wiley.

Sorenson, R.J. (1979). Design for accessibility. New York: McGraw Hill Book Company.

Technology and aging in America. (1985). Washington, DC: US Congress, Office of Technology Assessment, OTA-BA-265.

Vanderheiden, G.C. (1988). Considerations in the design of computers and operating systems to increase their accessibility to persons with disabilities. Madison, WI: Trace R&D Center Reprint Service, 1500 Highland Avenue, Madison, WI 53705.

B. Case Studies

Winnipeg Airports Authority, Inc.
Winnipeg, Manitoba

The Winnipeg Airports Authority has had a Barrier Free Advisory Committee for a number of years. The members are comprised of community volunteers and Airport personnel. In 1999 WAA altered their mission statement to include promoting the principles of Universal Design. They are committed to developing a comfortable and useable airport for all travelers. As stated in their Strategic Directions, “Deliver state-of-the-art facilities which showcase universal design principles.”

Within the last year the Committee has been reconstituted as the Universal Design Advisory Committee. A universal design specialist has been contracted with WAA to review all plans and projects to ensure they conform to the principles.

The Universal Design Advisory Committee provides input and is given feedback quarterly on projects and the work of the UD consultant. There is optimism that issues are and will be addressed through the cooperation of the facility personnel, the clear commitment to universal design, the expertise brought to projects and the volunteers from the community.

Excerpt from Adaptive Environments, Inc., Boston Mass. USA

South Boston Waterfront: A Neighborhood Fit for People

South Boston Waterfront

Boston is building its first new neighborhood in 150 years. This is the one opportunity in many lifetimes to define our city and ourselves through decisions we make about design. A record-breaking \$20B public investment in infrastructure improvements has transformed the little-known district of warehouses, parking lots and working port into the largest development opportunity on the East Coast. Bordered by downtown, the interstate highway system, the airport, the deep-water port, and South Boston, the Waterfront is 1000 acres facing a pristine harbor.

A Neighborhood Fit for People.

We must seize the opportunity to create places in the South Boston Waterfront that are beautiful and accessible for the widest possible array of users. This is the place to demonstrate that we have the vision and the talent to go beyond minimal requirements for access under the law and create integrated solutions that reflect a community that welcomes all.

Universal design is a worldwide movement dedicated to designing products, environments and communications responsive to the spectrum of human needs. Sometimes called design for all, inclusive design, or lifespan design, universal design is not a design style but an orientation to design based on the following premises:

- Disability is not a special condition of a few;
- It is ordinary and effects most of us for some part of our lives;
- If a design works well for people with disabilities, it works better for everyone;
- Usability and aesthetics are mutually compatible.

The following standards have been developed to clarify and guide universal design:

1. Equitable design
2. Flexible design
3. Simple and intuitive use
4. Perceptible information
5. Tolerance for error
6. Low physical effort
7. Adequate space for approach, reach and comfort

The City of Boston's Commitment to Universal Design

The City of Boston has made a commitment to universal design in The Seaport Public Realm Plan: "Transportation, open space, access to the harbor, pedestrian facilities and residential, civic and commercial buildings should be usable by all people, to the greatest extent adaptation or specialized design."

How can we make it happen?

There is no question that government, the developers and the designers are committed to meeting the requirements for access under the law. But compliance does not invite the quality and scope of creative problem solving envisioned by universal design. Universal design focuses on the power of the environment to shape human experience. Our self-esteem, identity, and well-being are deeply affected

by how well we function in our physical surroundings. Providing individuals with a sense of comfort, independence and control contributes to making great, attractive places that people want to be.

Excerpts from Pacific Bell: EXECUTIVE SUMMARY

I. APPLYING UNIVERSAL DESIGN

Background

Universal design is a concept used in the process of making architectural environments accessible to people with disabilities. It is based on two simple but important lessons:

- It is much more cost effective to design access at the blueprint stage than to add access on later, through retrofits and reconstruction.
- The quality of access is far superior when it is incorporated into the structural design from the beginning.

Our recommendations below encourage Pacific Bell to apply the lessons of accessibility learned within the architectural realm to the design of its own telecommunications technologies and products. (This especially includes product design at Pacific Bell Information Systems, and also Pacific Bell Directory.)

We believe universal design is the best way for Pacific Bell to capture the smartest thinking about innovative uses for its products, and to meet customers' needs more effectively than is possible to expect from the current design process.

It also is the key for building new market awareness and penetration that translates directly to Pacific's bottom line.

Universal Design for Telecommunications

Example: Volume Amplification Control in Telephones. An example of the benefits of designing in access to accommodate the broadest range of users from the very beginning. When volume amplification is built into the original design of a telephone, the cost is inconsequential. As a specialized device, incorporated after the fact, it costs about \$40--an additional expense for people who are hard of hearing.

Benefits: Useful for hard-of-hearing individuals, and also for anyone using a telephone in noisy environments like airports, hotels, offices, or public phone booths.

Electronic Curb Cuts

Those of us with disabilities think that universal design in telecommunications will serve the entire society as "electronic curb cuts." Here's what we mean: Curb cuts at cross walks designed for people unable to negotiate steps actually assist a wide range of people besides people in wheelchairs: parents with strollers, children and messengers on bikes, shoppers with grocery carts.

Universal design in telecommunications can provide opportunities for people who cannot use the telephone network as it is currently constituted or provisioned, as well as for many others with a wide range of abilities and needs.

A prime example of a universal design applications for telecommunications is the use of redundant visual and auditory information. Many of the recommendations in this report draw on that concept.

Useful precedents for universal design are worth studying. A few other industries besides the building trades have proven that designing a product for a group with disabilities usually turns out to be an opportunity for much broader market penetration with the general public as well.

Electronic Curb Cuts

Books on Tape: First developed for the blind, audio-cassette versions of books and other printed materials have developed into a multi-million dollar industry for a mass market that includes commuters, travelers, and many seniors.

Closed Captioning: Legislation passed in 1990 requires that all television screens 13 inches or larger, sold in the U.S. after July 1993, must have built-in decoder circuitry for current closed captioning. Captioning is an important service for deaf and hearing impaired consumers, but the service is useful and appreciated by others as well--kids learning to read, adults overcoming illiteracy who practice their reading, people who use English as a second language.

RECOMMENDATIONS

- 1) Incorporate universal design into the product development process from the beginning, and throughout the process.
- 2) Require product developers to use the resources and skills of Human Factors Engineering as a critical step in the design and development of all new products.
- 3) Add both staffing and training capabilities to Human Factors in order to provide the necessary expertise to product managers on functional design requirements for people with disabilities.
- 4) Develop practical, workable "filters" in Human Factors that can be applied at all critical phases of product development.
- 5) Require the appropriate leaders of product development to ensure that "filter questions" related to specific functional limitations be analyzed and answered for every new product.
- 6) Include people with disabilities in the beginning and test phases of all new product designs.
- 7) Direct vendors (CPE, network switches) to address specific issues of functional access for customers with disabilities as part of their contractual arrangements with Pacific Bell. 30)
- 8) Continue the market focus toward people with disabilities so the business and product teams can understand this segment adds revenue, in addition to helping the company improve its product designs.
- 9) Provide printed materials in a variety of media to better meet customer needs. Use audiotext services as a means of disseminating information. Research other formats that would serve the information needs of people with disabilities. Start with the phone bills.
- 10) Offer Directory Assistance, White Pages, and Yellow pages in different media, especially Baudot-accessible formats.
- 11) Promote video teleconferencing applications that create greater access for deaf, hard of hearing, and speech-impaired customers.
- 12) Test, develop, and promote ISDN's advanced sound quality to hard-of-hearing people.
- 13) Promote Priority Ringing to households with deaf and hearing customers.
- 14) Make the Message Center accessible to TDD users.
- 15) Make products for education accessible to expand the potential market to include special education.
- 16) Increase efforts to inform customers about the equipment lending program.
- 17) Include people with disabilities in advertising and marketing campaigns.
- 18) Assign top priority to implement Voice Dialling for PCS.
- 19) Pacific Bell should set vendor standards for PCS equipment and network services in order to address major concerns for specific categories of disability
- 20) Include people with disabilities in all PCS trials.
- 21) Develop and market PCS as a "wayfinding" tool to assist users in determining locations, and also as an environment control device.
- 22) Aggressively market PCS to people with disabilities, demonstrating its advantages both inside and outside the home.
- 23) Include people with disabilities in all phases of broadband trials.

- 24) Design redundancy in the use of interfaces for broadband products and services.
- 25) Allow customers to select a mode (text, audio) in which they give and receive information.
- 26) Establish partnerships or alliances with companies that provide (or plan to offer) information in forms accessible to people with disabilities.

Copyright © 1996 Pacific Bell. All Rights Reserved.

C. Programs

Adaptive Environments Inc.
Boston, Mass.
Universal Design Education Program

Universal Design Institute
University of Manitoba
Faculty of Architecture
Elective course

Special Program:
Manitoba League of Persons with Disabilities
Gail Finkel, M. Arch.

D. Sources for more information

Adaptive Environments Inc. Boston, MA, USA
www.adaptenv.org

Universal Design Institute
University of Manitoba
Winnipeg, Manitoba

Center for Inclusive Design and Environmental Access
School of Architecture and Planning, University of Buffalo, NY, USA
www.ap.buffalo.edu

Centre for Universal Design, North Carolina State University
www.ncsu.edu/ncsu.design/cud

DesignAge, Royal College of Art, London, UK
www.designage.rcca.ac.uk

Gail Finkel, M. Arch.
Winnipeg, Manitoba

European Design for Ageing Network, DAN
www.valley.interact.nl/dan

Trace Centre, Wisconsin, USA
www.trace.wisc.edu

E. Letters of support

Attached please find a letter from the Inter-Organizational Access Committee supporting the Universal Design Policy as amended by the Access Advisory Committee. (Attach Letter).

Appendix E

City of Winnipeg eStyle Guide

All City of Winnipeg staff producing, reviewing, developing and/or publishing content for Winnipeg.ca should read this document and use it as a guide to Web development in conjunction with, but not replacing, the [City of Winnipeg Web Standards, Guidelines & Procedures](#).

Guidelines are crucial for Web Writing:

1. Write for your audience
 - Who is your audience?
 - What content are they looking for?
 - What do they know about the topic/issue?
 - What are their reasons for reading this page?
2. Write for the medium
 - It's about 25% harder to read text on screen
 - Less than 20% of users read word-by-word, most users just scan text

Editorial Style Guidelines

Appropriate online writing:

Write in standard register
Use plain English
Use the active voice
Follow spelling and grammar conventions
Use punctuation and textual emphasis to clarify meaning
Cut unnecessary words
Use a shorter word over a longer one
Cut unnecessary phrases or sentences
Use the active voice whenever possible
Print out and edit – be ruthless!

Improving scanability:

The vast majority of users do not read text online word-by-word. Almost 80% scan it.

Use headings and subheadings and make them meaningful!
Keep paragraphs short
One topic per paragraph
Opening sentence should be the topic sentence
Use short, simple sentence structures
Choose a shorter word over a longer one
Use bulleted lists

Techniques for writing longer texts:

1. Reverse the normal style of writing

Use an inverted pyramid – conclusion first, important details next and other details and background later

2. Write a summary paragraph

Summary should be designed assist the user to determine whether:

- This is the document they are looking for
- This is something they will want to invest time in reading

Should not be “teaser”, but an accurate summary of the document’s contents

3. Use page chunking for non-linear text

Split information into page-long chunks
Each page should focus on a single topic or theme
Background details can be provided on separate pages

Names and titles:

After first reference, use a person's last name only
In photo cutlines, use the first and last names
Capitalize City of Winnipeg and the City (when referring to the corporation, not the geographic region)
Capitalize the names of city departments, but not branches
Capitalize the titles of employees only when the title is in front of the person's name (i.e. – Corporate Communications Manager, Steve West, but Steve West, corporate communications manager)
Capitalize document names for “official” reports and studies
MLA Diane McGifford (NDP - Lord Roberts)
City Hall (refers to the building), city hall (refers to the administration)
Winnipeg Police Service (not Winnipeg Police Services)

Abbreviations:

Provinces - B.C., Alta., Sask., Man., Ont., Que., N.B., N.S., P.E.I., Nfld., N.W.T., Yukon
States - Ala., Ariz., Ark., Calif., Colo., Conn., Del., Fla., Ga., Ill., Ind., Kan., Ky., La., Me., Md., Mass., Mich., Minn., Miss., Mo., Mont., Neb., Nev., N.H., N.J., N.M., N.Y., N.C., N.D., Okla., Ore., Pa., R.I., S.C., S.D., Tenn., Tex., Vt., Va., Wash., W.Va., Wis., Wyo.
Metric - mm, cm, m, km, kg, g, km-h (no periods)
Const. Joe Bloe and Sgt. Jane Smith of Winnipeg Police Service
510 Main St., but Main Street

Numbers and dates:

Jan. 1, 2003, but January 2003 (no comma between the month and year)
Numbers one to nine are spelled out, but 10 and above are numerals. Same for first, second up to ninth, then 10th, etc.
Telephone numbers: No parentheses. Use these forms:
204-986-1234
204-986-1234, ext. 14
800-328-7448

Spelling:

Web site (capitalize Web), e-mail, online, e-government, Internet, Intranet.
2 p.m., not 2:00 p.m.
% (not per cent).

Attribution:

The Mayor said (not says)

Headlines:

Capitalize only the first letter of the first word in the sentence (unless the headline includes a proper name such as City of Winnipeg)
Keep short and snappy

Body copy:

No underlining

Bylines:

By Joseph Bloe

Webitorial: Writing for the Web

“Webitorial” is text or editorial copy that has been adapted for the Internet. Editorial copy that has been repurposed (published on the Web exactly the way it appears in print) should be in a document format such as Adobe Acrobat .pdf or Microsoft Word .doc. People read differently when reading on-screen. They are reading light (the light emitted from a screen) rather than reading a printed page, so their reading styles differ. Long lines of text across a page are difficult to scan. Usability studies recommend lines of 55-100 characters long (depending on the size and type of font style used), with 55 characters being the ideal.

Please follow the basic style guidelines below when writing Webitorial content or adapting editorial content for the Web.

Accurate linking:

Copy all URLs and email addresses accurately. While broken or incorrect URLs may occur sometimes for a variety of reasons, this kind of error is unprofessional and does not reflect well on the Web site

Brevity:

Use the fewest number of words possible; e.g. “You will be able to click a button” should read “You can click on a button” or simply “Click here”

Bullet Points:

Use bullet points or numbered lists wherever possible. This is another highly recommended method of making copy more scannable on the Web

Headlines and sub-heads:

Headlines and sub-heads should be attention-getters that summarize the message in the body copy. Subheads should be used liberally within long blocks of text on a Web page so that readers can easily scan the copy by letting the eye jump from heading to heading. Headlines can sometimes be written by taking a lead sentence from the copy and rewriting it. Use active voice when writing headlines.

Capitalizing headlines:

Headlines should follow newspaper style; i.e. capitalize only the first letter of the first word of the sentence, unless the subsequent words are a proper name, e.g. City of Winnipeg

Leads:

Lead paragraphs must draw the reader in -- fast. (Readership surveys at Globe and Mail indicate most readers read only five paragraphs of full page articles. The first and last paragraph are almost always listed.) Leads are best when they ask a provocative question, are in some way controversial, or are a little oblique so that reader must keep reading

Pronouns:

Avoid use of the familiar pronoun. e.g. “we” or “us” should be “The City of Winnipeg,” and “you” should be “citizens” or “employees” as applicable. However, these pronouns may be acceptable when referring to specific groups or activities

Titles:

Titles of books and publications should appear in italics; i.e. *The Globe and Mail*; *Building Futures*, etc.

Voice:

Please use the active voice (use verbs, action words). For example, rather than writing “It was the decision of the committee that...”, say “We decided that...” or “The Committee decided that...”

Web Conventions:

When talking about the content of a Web site, make sure you say the content is ON the site and not IN the site

Avoid hackneyed phrases when writing about the Internet, e.g. "information highway (or superhighway)" or "cyber-(anything)"

Avoid use of intensive/reflexive pronoun, e.g. "Thank you for meeting with myself" should be simply "Thank you for meeting with me"

In any HTML document, all links should be "live" (not simply spelled out as text; e.g. not just "winnipeg.ca" but "<http://winnipeg.ca>"). In email documents, senders referring to links should write out the proper protocol, i.e. "<http://winnipeg.ca>" so that the reader can click on the links to send and email or enter the Web site

Spell check all content that is going to be published. Verify all names, links and other factual details such as numbers, dates, etc.

Most people expect underlined text to be a text link, so use font size, boldfacing, coloring or italicizing for emphasis rather than underlining