

**JACQUELINE/ADA STREET DYKE**

**Dyke Inspection Sheet**

Dyke: Ada/Jacqueline Dyke

Weather: Sunny, 27 °C

Immediate Action Required •

**Report No.: 1 of 2**

Date: June 21, 2004

Inspected By: N.Oliveira, S.Jeater

Further Investigative Work •

General Information	
<p><u>Section Inspected:</u> Complete • Section ✓ Specify: <u>0+000</u> to <u>0+350</u> m</p>	<p><u>Overall Condition Rating:</u> 3 (this section only) <b>Comments:</b> Fair/poor condition rating reflects both the condition of the vegetation, minor instability of rip-rap material along dyke face and plugging of the storm outlet structure.</p>
<p><u>Adjacent Property Use:</u> Residential ✓ Parkland ✓ Commercial • Industrial •</p>	<p><b>Comments:</b> Adjacent residential properties from 0+000 to 0+230. Primarily parkland from 0+230 to 0+350 with residential homes beyond.</p>
Dyke Facing	
<p><u>Dyke Face Material:</u> Concrete • Gabion •  Earthfill ✓ Other ✓ Specify: Rip-Rap <b>Condition Rating:</b> 3 <b>Comments:</b> Dyke face consists of large rip-rap intermixed with sparse to heavy vegetation (photo 7586) up to St. 0+160. From St. 0+160 to ~0+330, dyke face consists primarily of earth with heavy vegetation. A mix of vegetation with rip-rap is present from ~0+330 to 0+350.</p>	<p><u>Structural Condition (Dyke Face):</u> Erosion • Damage (impact, cracks, etc) • Movement (including unevenness, slipping, bulging or slumping) ✓ Specify type: Fallen trees along dyke face. <b>Condition Rating:</b> 3 <b>Comments:</b> No noticeable signs of erosion, however minor signs of rip-rap movement observed in selected areas from 0+000 to 0+160. Signs of toppled vegetation (primarily trees) along steep slopes from 0+160 to ~0+325, however relatively heavy adjacent vegetation appears to protect against slope instability. <b>Recommendation: Monitor for both excessive vegetation growth and potential for failure along steep side slopes.</b></p>
<p><u>Toe:</u> Toe Protection Material (concrete, gabion, earth or other) Specify: Earth (soil) and rip-rap from 0+000 to 0+160. Toe consists of earth (soil) with rough vegetation from 0+160 to 0+350. Erosion Yes • No ✓ <b>Condition Rating:</b> 4 <b>Comments:</b> No signs of erosion noted.</p>	<p><u>Joints:</u> (not applicable to earthfill dykes) Sealant Present Yes • No •  <b>If yes, condition rating:</b> Vegetation (in joints) Yes • No • <b>Comments:</b> Not applicable.</p>
<p><u>Vegetation:</u> None • Full ✓ Partial • Type: Primarily trees with shrubs, bushes, wild grass, etc. <b>Comments:</b> Vegetation well established along side slopes of dyke. Some large trees/branches have broken and fallen along steeper slopes (~St. 0+160 to 0+325, see photo 7573).</p>	<p><u>Water Infiltration:</u> (look for where water can leak behind structure) Yes • No ✓ If yes, due to: Joints • Cracks • Liner • Other (specify) • <b>Comments:</b></p>
<p><u>Additional Information:</u> Access Available Yes • No ✓ <u>Estimated Water Depth:</u> Variable ~ 20 to 30cm at edge. <b>Comments:</b> Although access along the dyke face from St. 0+000 to 0+160 is available, it is along generally along moderate to steep slopes consisting of rough vegetation and loose rip-rap. Access along the dyke face from St. 0+160 to 0+350 is limited due to the rough vegetation present.</p>	
Top of Dyke	
<p><u>Dyke Top Material:</u> Concrete • Asphalt • Earth ✓ Rip Rap •  Other • Specify: <b>Condition Rating:</b> 3 <b>Comments:</b> Well vegetated (trees and bush). Some toppling of trees and branches generally from 0+160 to 0+325 which has blocked the traveled pathway in several areas.</p>	<p><u>Structural Condition (Top of Dyke):</u> Erosion (behind wall, etc.) • Damage (vandalism, etc) • Movement (including unevenness, heaving or settlement) • Specify type: <b>Condition Rating:</b> 4 <b>Comments:</b> No noticeable signs of erosion.</p>
<p><u>Pedestrian Access:</u> Sidewalk • Pathway ✓ None ✓ Other • Specify: If present, width of access way: <b>Condition Rating (if present):</b> 2 <b>Comments:</b> Traveled pathway from St. 0+000 to ~0+160 via dirt path adjacent to vegetation line (photo 7578). Similar dirt pathway available from St. 0+160 to 0+350, however pathway intermittent in areas and generally blocked by fallen or overgrown vegetation.</p>	<p><u>Protective Barrier:</u> Fence • Guard Rail • None ✓ Other • Specify: <b>Condition Rating (if present):</b> <b>Comments:</b></p>

Top of Dyke - Continued	
<p><u>Joints</u> : (not applicable to earthfill dykes)            Sealant Present      Yes   •                      No   •</p> <p><b>If yes, condition rating:</b>            Vegetation (in joints)      Yes   •                      No   •</p> <p><b>Comments:</b> Not applicable.</p>	<p><u>Drainage Conditions:</u> (ponding or low areas present)            Good      ✓                                      Poor   •</p> <p><b>Comments:</b> Drainage from top of dyke generally down either dyke face or to nearby adjacent properties (generally low lying). From St. 0+000 to ~0+125, drainage directed to roadway and catchbasins.</p>
<p><u>Illumination:</u> (check for lighting present along the top of the dyke)            Yes   •                                      No   ✓</p> <p><b>Condition Rating:</b>  <b>Comments:</b></p>	<p><u>Vegetation:</u>            None   •                                      Full   ✓                                      Partial   •</p> <p>Type: Trees, shrubs, bush, manicured and wild grass.  <b>Comments:</b> Vegetation generally not maintained along the top of dyke over the section reviewed. Wild grass typical along the majority of the top with exception of a few manicured areas adjacent to residential homes from St. 0+160 to 0+325 (likely maintained by home owner).</p>
<p><u>Additional Information:</u>  <b>Comments:</b> Limited access was available for sections of the dyke, primarily from 0+160 to 0+325 due to dense vegetation and lack of proper access points.</p>	
Area behind the Dyke (immediately adjacent)	
<p><u>Predominant Material:</u>            Concrete   •                                      Asphalt   ✓            Earth   •    Grass   ✓            Other   •    Specify:</p> <p><b>Condition Rating:</b> 3  <b>Comments:</b> Predominantly wild grass from 0+000 to 0+125 with adjacent asphalt (Jacqueline St.). Moderate to dense vegetation from 0+125 to 0+325 with areas of well manicured grass and vegetation maintained by adjacent home owners.</p>	<p><u>Drainage Conditions:</u> (ponding or low areas present)            Good      ✓                                      Poor   •</p> <p><b>Comments:</b> Drainage generally towards catchbasins located along Jacqueline Street for St. 0+000 to 0+125. Low lying areas located behind the dyke from 0+125 to 0+325, between the dyke and nearby residential properties.            Are catchbasins present?      Yes   ✓                                      No   •</p> <p><b>If yes, condition rating:</b> 3  <b>Comments:</b> Low rating relates to condition of storm outlet (refer to storm sewer/outlet structure section).</p>
<p><u>Vegetation:</u>            None   •                                      Full   ✓                                      Partial   •</p> <p>Type:  <b>Comments:</b> See above.</p>	<p><u>Accessibility:</u> (check for access areas behind the dyke only)            Sidewalks   •      Pathways   ✓      Roads   ✓      None   •</p> <p><b>Condition Rating (if present):</b> 3  <b>Comments:</b> As previously mentioned, Jacqueline Street borders the area behind the dyke from St. 0+000 to 0+125. Limited accessibility from 0+125 to 0+325 due to vegetation growth. A small parkland area with asphalt pathways is located behind the dyke from ~0+325 to 0+350.</p>
<p><u>Protective Barrier:</u>            Fence   •      Guard   ✓                                      None   ✓               Rail (partial)            Other   •      Specify:</p> <p>If fence, list type and ownership (i.e. private or city): An aluminum railing present from ~0+325 to 0+350 is owned by the City. No railing is present from St. 0+000 to ~0+325.  <b>Condition Rating (if present):</b> 4  <b>Comments:</b> Minor bends noted along the barrier, primarily on the top rail.</p>	<p><u>Illumination:</u> (check for lighting present behind the dyke)            Yes   ✓ (partial)                                      No   •</p> <p><b>Condition Rating:</b> 4  <b>Comments:</b> Limited lighting, primarily near St. 0+330 only.</p>
Storm Sewers/Sanitary Sewers/Outlet Structures	
<p>Yes   ✓                                      No   • (if no, proceed to next section)            If yes, type of structure (i.e. outlet, headwall, drainage pipe, channel or flush): Specify: Concrete headwall with 675mm storm outlet and steel grate at ~St. 0+125 (photo 7590) and manhole structure along top of dyke (photo 7577).  <b>Condition Rating:</b> 2  <b>Comments:</b> Outlet appeared to be completely plugged with vegetation, debris, etc.</p>	<p><u>Outlet:</u> (check for presence of gates or grates at the outlet)            Flap Gate      Yes   •                                      No   •            Safety Gate      Yes   ✓                                      No   •</p> <p><b>Condition Rating:</b> 4  <b>Comments:</b> Safety grate blocking the debris from entering river (photo 7590).</p>
<p><u>Outlet Flow:</u> (check for condition of channel downstream from pipe, obstructions within pipe, etc.)            Obstructions                                      Yes   •                                      No   ✓            Downstream Erosion                                      Yes   ✓                                      No   •</p> <p><b>Comments:</b> Minor erosion noted near floodgate and below discharge of PVC storm outlet.</p>	<p><b>General Comments:</b> Rip-rap located along outlet discharge (photo 7590).</p>

**RATING SYSTEM**

- |   |                            |   |
|---|----------------------------|---|
| 1 | <i>Unsafe Condition</i>    | Structure (or element) in very poor or unsafe condition which may pose public safety hazard.  |
| 2 | <i>Poor Condition</i>      | Structure (or element) in poor condition with significant deterioration noted. Deteriorations noted may impact on integrity and may require significant capital cost to bring to fair to poor condition rating. No safety hazard noted. |
| 3 | <i>Fair/Poor Condition</i> | Structure (or element) condition varies from fair to poor with some signs of significant deterioration in localized areas. Able to perform function, but at reduced capacity.   |
| 4 | <i>Fair Condition</i>      | Structure (or element) in fair condition with no visible signs of significant deterioration. Able to perform intended function with no apparent hindrance.  |
| 5 | <i>Good Condition</i>      | Structure (or element) in good condition with minor deterioration. Able to perform intended function with no apparent hindrance.  |

General Information	
<p><u>Section Inspected:</u>            Complete •            Section ✓ Specify: <u>0+350</u> to <u>0+525</u> m</p>	<p><u>Overall Condition Rating:</u> 4 (this section only)  <b>Comments:</b> Condition rating assumed proper functioning of the flap gate which could not be confirmed at the time of the visual assessment.</p>
<p><u>Adjacent Property Use:</u>            Residential • Parkland ✓            Commercial • Industrial ✓</p>	<p><b>Comments:</b> Adjacent parkland from 0+375 to 0+475. Pumping station and parkland adjacent to dyke from 0+475 to 0+525. The Adelaide Street bridge borders the dyke from 0+350 to ~0+375.</p>
Dyke Facing	
<p><u>Dyke Face Material:</u>            Concrete •            Gabion •            Earthfill ✓            Other ✓ Specify: Rip-rap / concrete rubble  <b>Condition Rating:</b> 4  <b>Comments:</b> Dyke face consists of large rip-rap intermixed with sparse vegetation from St. 0+350 to ~0+400 (photo 7555) with concrete rubble noted adjacent to headwall structure. From St. 0+400 to 0+450, dyke face consists primarily of earth with heavy vegetation. The dyke face consists of manicured grass from ~0+450 to 0+525.</p>	<p><u>Structural Condition (Dyke Face):</u>            Erosion • Damage (impact, cracks, etc) •            Movement (including unevenness, slipping, bulging or slumping) • Specify type:  <b>Condition Rating:</b> 4  <b>Comments:</b> No noticeable signs of erosion.</p>
<p><u>Toe:</u>            Toe Protection Material (concrete, gabion, earth or other)            Specify: Earth (soil) and rip-rap from 0+350 to 0+400. Toe consists of earth (soil) with dense vegetation from 0+400 to 0+450 (photo 7552). Earth with manicured grass characterizes the toe along St. 0+450 to 0+525 (photo 7540).            Erosion Yes • No ✓  <b>Condition Rating:</b> 4  <b>Comments:</b> No signs of erosion noted.</p>	<p><u>Joints:</u> (not applicable to earthfill dykes)            Sealant Present Yes • No •            If yes, condition rating:            Vegetation (in joints) Yes • No •  <b>Comments:</b> Not applicable.</p>
<p><u>Vegetation:</u>            None • Full • Partial ✓            Type: Primarily trees with shrubs, bushes, wild grass, etc.  <b>Comments:</b> Vegetation well established along side slopes of dyke from St. 0+375 to 0+400. Predominantly rip-rap with little vegetation from 0+350 to 0+375. Manicured grass along dyke face from 0+400 to 0+525.</p>	<p><u>Water Infiltration:</u> (look for where water can leak behind structure)            Yes • No ✓            If yes, due to:            Joints • Cracks •            Liner • Other (specify) •  <b>Comments:</b></p>
<p><u>Additional Information:</u>            Access Available Yes ✓ No • <u>Estimated Water Depth:</u> Variable ~ 20 to 30cm at edge.  <b>Comments:</b> Access generally available to the dyke face, however areas near ~ St. 0+425 are difficult to access due to dense vegetation.</p>	
Top of Dyke	
<p><u>Dyke Top Material:</u>            Concrete • Asphalt ✓            Earth ✓ Rip Rap •            Other • Specify:  <b>Condition Rating:</b> 4  <b>Comments:</b> Asphalt pathway along top of dyke (approximately) from St. 0+350 to 0+400 (photo 7554). Well vegetated (trees and bush) from 0+400 to ~0+450. Manicured grass from 0+450 to 0+525 (photo 7540).</p>	<p><u>Structural Condition (Top of Dyke):</u>            Erosion (behind wall, etc.) • Damage (vandalism, etc) •            Movement (including unevenness, heaving or settlement) • Specify type:  <b>Condition Rating:</b> 4  <b>Comments:</b> No noticeable signs of erosion.</p>
<p><u>Pedestrian Access:</u>            Sidewalk • Pathway ✓ None ✓            Other • Specify:            If present, width of access way:  <b>Condition Rating (if present):</b> 4 (for constructed pathway)  <b>Comments:</b> Asphalt pathway along top of dyke from St. 0+350 to 0+400. Limited access from 0+400 to 0+450 due to dense vegetation (no formal path constructed). Although no constructed pathway exists from 0+450 to 0+525, the top of dyke (open grass) is easily accessible.</p>	<p><u>Protective Barrier:</u>            Fence • Guard Rail ✓ None ✓            (partial) (partial)            Other • Specify:  <b>Condition Rating (if present):</b> 4  <b>Comments:</b> Aluminum railing present from St. 0+350 to ~0+390. Top rails along several areas observed to be bent, however barrier typically sound. Aluminum railing present along headwall structure for storm outlet (St. 0+400, see photo 7546) in good condition. No railing or protective barrier elsewhere along the section reported.</p>

Top of Dyke - Continued	
<p><u>Joints</u> : (not applicable to earthfill dykes)            Sealant Present      Yes      •      No      •  <b>If yes, condition rating:</b>            Vegetation (in joints)      Yes      •      No      •  <b>Comments:</b> Not applicable.</p>	<p><u>Drainage Conditions:</u> (ponding or low areas present)            Good      ✓      Poor      •  <b>Comments:</b> No ponding of water observed along top of dyke. Drainage typically towards dyke face or adjacent land (St. 0+410 to 0+525 also drains back to the adjacent parkland and pumping station and gravel parking area and to adjacent storm drainage ditches. See photo 7542).</p>
<p><u>Illumination:</u> (check for lighting present along the top of the dyke)            Yes      •      No      ✓  <b>Condition Rating:</b>  <b>Comments:</b></p>	<p><u>Vegetation:</u>            None      •      Full      •      Partial      ✓            Type: Trees, shrubs, bush, manicured and wild grass.  <b>Comments:</b> Vegetation from St. 0+400 to 0+525 consisting primarily of manicured grass (City owned).</p>
<p><u>Additional Information:</u>  <b>Comments:</b> With exception of dense vegetation encountered near St. 0+400 to 0+450, top of dyke was generally accessible.</p>	
Area behind the Dyke (immediately adjacent)	
<p><u>Predominant Material:</u>            Concrete      •      Asphalt      •            Earth      •      Grass      ✓            Other      ✓      Specify: Rip-rap (0+350 to 0+375)  <b>Condition Rating:</b> 4  <b>Comments:</b> Predominantly grass from 0+375 to 0+525. Rip-rap and the concrete embankment for the Adelaide Street bridge from St. 0+350 to 0+375.</p>	<p><u>Drainage Conditions:</u> (ponding or low areas present)            Good      ✓      Poor      •  <b>Comments:</b> No ponding water noted during the site visit, however a drainage pipe located within a ditch between St. 0+425 and ~0+460 which provides for drainage of the adjacent gravel parking lot was observed to be plugged.            Are catchbasins present?      Yes      •      No      ✓  <b>If yes, condition rating:</b>  <b>Comments:</b></p>
<p><u>Vegetation:</u>            None      •      Full      ✓      Partial      •            Type:  <b>Comments:</b> See above.</p>	<p><u>Accessibility:</u> (check for access areas behind the dyke only)            Sidewalks      •      Pathways      •      Roads      ✓      None      •  <b>Condition Rating (if present):</b> 4  <b>Comments:</b> The asphalt pathway noted along the top of dyke from St. 0+350 to 0+400 directs behind the dyke from St. 0+400 to ~0+460. No constructed access path exists elsewhere, however the back of the dyke over this section is still considered accessible primarily for inspection purposes.</p>
<p><u>Protective Barrier:</u>            Fence      •      Guard      ✓      None      ✓                                     Rail      (partial)            Other      •      Specify:            If fence, list type and ownership (i.e. private or city): An aluminum railing present from 0+350 to ~0+380 is owned by the City. No railing is present from St. 0+380 to 0+525.  <b>Condition Rating (if present):</b> 4  <b>Comments:</b> Minor bends noted along the barrier, primarily on the top rail.</p>	<p><u>Illumination:</u> (check for lighting present behind the dyke)            Yes      •      No      ✓  <b>Condition Rating:</b>  <b>Comments:</b></p>
Storm Sewers/Sanitary Sewers/Outlet Structures	
<p>Yes      ✓      No      • (if no, proceed to next section)            If yes, type of structure (i.e. outlet, headwall, drainage pipe, channel or flush): Specify: Concrete headwall with 675mm storm outlet and flap gate at ~St. 0+400 (photo 7546) and overflow weir (photo 7549). Sanitary manhole observed adjacent to toe of dyke at ~0+420 (photo 7551).  <b>Condition Rating:</b> 4  <b>Comments:</b> No signs of concrete deterioration. Headwall structure complete with aluminum railing for safety.</p>	<p><u>Outlet:</u> (check for presence of gates or grates at the outlet)            Flap Gate      Yes      ✓      No      •            Safety Gate      Yes      •      No      •  <b>Condition Rating:</b> 4  <b>Comments:</b> Fair rating assessed as proper functioning of the flap gate could not be confirmed.</p>
<p><u>Outlet Flow:</u> (check for condition of channel downstream from pipe, obstructions within pipe, etc.)            Obstructions      Yes      •      No      ✓            Downstream Erosion      Yes      •      No      ✓  <b>Comments:</b> No signs of erosion immediately downstream of the outlet.</p>	<p><b>General Comments:</b> Stones located at discharge bay of headwall structure helps slow down flow of water prior to entering stream channel.</p>

#### RATING SYSTEM

1	<b>Unsafe Condition</b>	Structure (or element) in very poor or unsafe condition which may pose public safety hazard.
2	<b>Poor Condition</b>	Structure (or element) in poor condition with significant deterioration noted. Deteriorations noted may impact on integrity and may require significant capital cost to bring to fair to poor condition rating. No safety hazard noted.
3	<b>Fair/Poor Condition</b>	Structure (or element) condition varies from fair to poor with some signs of significant deterioration in localized areas. Able to perform function, but at reduced capacity.
4	<b>Fair Condition</b>	Structure (or element) in fair condition with no visible signs of significant deterioration. Able to perform intended function with no apparent hindrance.
5	<b>Good Condition</b>	Structure (or element) in good condition with minor deterioration. Able to perform intended function with no apparent hindrance.

