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STANDARDIZED TERMS OF REFERENCE FOR PROFESSIONAL REPORTS AND TECHNICAL STUDIES

(Final Version – February 4, 2015)

INTRODUCTION

The purpose of this document is to describe the general requirements for professional reports and technical studies that may be required as part of the development approval process. The Terms of Reference (TOR) included in this document are intended as a reference guide for property owners and developers to assist in determining the scope of work required by qualified registered professionals. The requirements specified in this document include the general standards that should be addressed in all technical and professional reports

Applicants are required to meet with City staff prior to commencing the professional report or technical study to confirm the parameters of the TOR and tailor submission requirements to the specific development proposal. Every effort will be made to clarify the requirements for the specific report or technical study in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to undertaking the professional report or technical study. Where more than one professional report or study is required, reference between the report(s) or stud(ies) should be made to highlight any overlapping recommendations.

Reports are to be prepared at the applicant's expense and security may be required as per the City of West Kelowna's Development Applications Procedures Bylaw and Works and Services Bylaw. The applicant is required to coordinate with the necessary qualified professional(s) to appropriately assign responsibilities prior to initiating the professional report or technical study. The applicant may be required to register the professional report or technical study on the Land Title Certificate as a restrictive covenant to notify future property owners of site conditions and specific development requirements.

Other studies not listed in this document may be required as part of the development approval process. In such circumstances, staff will work with the applicant to develop TOR for the specific professional report or technical study as needed.

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SCHEDULE 1 – PART A: ENVIRONMENTAL IMPACT ASSESSMENT (EIA) – (GENERAL)

1. Description

Environmental Impact Assessments identify significant environmental values to ensure they are protected prior to any proposed site disturbance. An Environmental Impact Assessment may be a stand-alone study or may be required to be submitted in conjunction with an Environmental Management Plan. Parts B and C of this schedule contain more specific information that will be required for Environmental Impact Assessments related to Development Permit Area (DPA) 5 (Aquatic Ecosystem) and DPA 6 (Sensitive Terrestrial Ecosystem) as specified in the City of West Kelowna Official Community Plan. Environmental Impact Assessments must be performed in accordance with the B.C. *Environmental Assessment Act*. Environmental Impact Assessments are typically requested at the time of rezoning, subdivision or development permit application. If the EIA is triggered by a development permit application, the assessment must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Assessments are to be prepared, signed and sealed by a Qualified Environmental Professional licensed in BC with local experience with regard to sensitive ecosystems and wildlife species in the Okanagan region, standard development practices and published best management practices, unless otherwise approved by the General Manager of Development Services.

4. Professional Standards

4.1. An original signed and sealed assessment must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the assessment must be identified. The person or corporation who provided the funding or who requested the assessment to be completed must be identified.

4.2. Methods used in the assessment must be repeatable and based on agency and/or scientific standards appropriate to the landscape being assessed. The assessment must include the following information:

1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff as outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the assessment must be identified in the assessment or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the assessment. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Site Profiles and Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. When development is occurring on or near slopes that are greater than 20%, a topographic survey may be required. The survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Map of the study area demonstrating the proximity to designated environmentally sensitive areas such as those previously identified in the City of West Kelowna Official Community Plan (or other documents as available) and any newly identified environmentally sensitive areas. These include hillside, aquatic ecosystem, and sensitive terrestrial ecosystem development permit areas, watercourses, and updated sensitive ecosystem inventory locations (such as Foreshore Inventory Mapping, Sensitive Ecosystem Inventory, Sensitive Habitat Inventory and Mapping, etc.).

5.7. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.8. Provision of data – All new and/or updated information (i.e. Rare Element Occurrences and revised TEM polygons and databases) will be provided by the Professional who prepared the assessment to appropriate groups and agencies such as the BC Conservation Data Centre and the City of West Kelowna. All data will be provided in digital format to enable incorporation into current works in process such as the Sensitive Habitat Inventory and Mapping (SHIM), and Sensitive Ecosystem Inventory (SEI), both of which are paramount in providing current spatially accurate information used in responsible planning and development.

5.9. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11" x 17". Larger drawings (i.e. 24" x 36") will also be accepted as long as each 24" x 36" is accompanied with an 11" x 17" sized map to enable copying. Inclusion of a graphic scale is required on all plans and maps. Any additional copies at a reduced size must be clearly marked 'Not to Scale'.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must include a title, the author of the document and be dated, including any subsequent revision dates.

6. Basic Assessment Requirements – Generic Environmental Impact Assessment

6.1. The assessment must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The assessment must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The assessment must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. Environmental Impact Assessments should be performed generally in accordance with the B.C. Environmental Assessment Act. The policy, legislation, bylaw or regulatory framework that triggered the preparation of the Environmental Impact Assessment (EIA) must be clearly described within the introductory section of the assessment. This framework will determine the actual issues that need to be addressed in the EIA, which will be confirmed by Staff prior to initiating the assessment.

6.5. Assessments are typically broken down into two phases:

1. **Phase 1 - Inventory Phase,** or pre-planning phase, includes the identification of sites within the study area that qualify as ESAs based on existing biological and physical conditions, or such conditions prior to any recent site disturbances; and

2. **Phase 2 - Impact Assessment and Mitigation Phase –** This phase incorporates the information from the Inventory Phase (Phase 1) and examines it in the context of the proposed development.

6.6. **Phase 1 – Inventory Phase** - The Inventory Phase Report must include:

1. A summary of any pre-existing information on the site collected by government agencies or in published literature will be gathered, assessed and presented;

2. The identification of gaps in the existing information and state the best ways to fill these information gaps. Additional fieldwork may be required to fill information gaps and to reach the desired level of information to conduct the EIA. Information gaps may also be filled from local information sought from other interested parties including current and past owners, neighbours, and other local groups;

3. Where facts are incomplete or surmised, the levels of confidence or reliability in the environmental knowledge should be assessed and documented.

4. A summary of all field assessments completed to meet the policy and regulatory requirements and to identify impacts on the environment;

5. The identification of significant natural features;

6. The identification of any existing buffers around sensitive areas;

7. A statement regarding the rarity and uniqueness of the particular habitat as it relates to the remaining habitat in the City and the Okanagan region; and

8. An Assessment of Environmentally Sensitive Areas (ESAs)[1] - The assessment needs to highlight the stratification of communities occurring within the study area based on environmental sensitivity. This is a key element in the planning process as it identifies area constraints and opportunities (avoidance/conservation, mitigation and restoration) to encourage a more integrated and sustainable development plan.

   The following stratification system shall be applied to all ESA evaluations.

   - **ESA – 1 High:** Polygons delineated as ESA-1 contain rare and/or significant physical features, plants and animals or include ecologically functioning natural systems. ESA-1 areas include vegetation and wildlife characteristics representing a diverse range of sensitive habitat. These features contribute significantly to the overall connectivity of the habitat and ecosystems. Various types of habitat will qualify as ESA-1 on the basis of sensitivity, vulnerability, connectivity and biodiversity. All wetlands, high value foreshore, locally/regionally rare plant communities, animals and habitats will be considered as Very High.
     - Areas given an ESA -1 rating are considered the highest priority for protection of ecosystem function and values and therefore avoidance and conservation of ESA-1 designations should be the primary objective. If development is required and justified within these areas mitigation to reduce or eliminate environmental impacts shall be required as well as compensation to promote no net loss to the habitat (typically with a 3:1 replacement of equivalent functioning habitat). Only when residual,

1 *Adapted from the works of J. Grods, R.P.Bio., L. Gyug R.P.Bio,and M. Sarell, R.P.Bio; and RDCO.*

permanent loss of habitat is unavoidable and after it proves impossible or impractical to maintain the same level of ecological function, will compensation be considered.

- **ESA – 2 Moderate:** Polygons delineated as ESA-2 contain physical features, plants, animals and habitat characteristics which contribute to the overall diversity and contiguous nature of the surrounding natural features. ESA-2 may also include areas used to buffer ecological functions of ESA-1 areas. Areas given the classification of ESA-2 are only of slightly lower priority for protection of ecosystem function and values than ESA-1 areas. Therefore, a clear rationale shall be provided to clarify the distinction between assigning the ESA-2 criteria instead of the ESA-1 areas.
  - Some degree of development may be considered in ESA-2 areas as long as the development does not have any potential negative impact on ESA-1 areas. If development is pursued in ESA-2 areas, portions of the habitat should be retained (40-80%) and integrated to maintain the contiguous nature of the landscape. Any loss to the ESA-2 areas shall be offset by habitat improvements to the remaining natural areas found on the property and must ensure habitat function is maintained or improved in the retention areas.

- **ESA – 3 Low:** Polygons delineated as ESA-3 represent disturbed habitats or fragmented features that are not locally or regionally rare. However, these areas still contribute to the diversity and connectivity of the landscape and may contain natural habitats, and some features of interest (i.e. tree patches, rock outcroppings, drainages and corridors), although based on the condition and adjacency of each habitat the significant function within the landscape is limited. If development is pursued in these areas, the impacts should be offset by habitat improvements in other more sensitive natural areas found on the property. There may also be portions of the area that have significant ecological functions within the landscape (i.e. buffers to ESA 1 and/or ESA 2, or corridors) that should be retained.

- **ESA – 4 Not Sensitive:** Polygons delineated as ESA - 4 contribute little or no value to the overall diversity of vegetation, soils, terrain and wildlife characteristics of the area. These areas have generally experienced anthropogenic disturbances (i.e. a driveway or other approved land clearing but does not include land cleared for agriculture) with little or no possibility for recovery or rehabilitation. Development is therefore encouraged to be focused to these sites before consideration of using higher-rated sites within the planning area. These areas shall not be considered as areas for restoration and enhancement or as recruitment as higher value ESA to offset development in other areas.

9. ESA Criteria should be determined through the following:
   - The professional completing the report shall utilize the best available local data for ecosystem mapping and biological values and are expected to refine the mapping to a suitable resolution appropriate to the size of the site.

- At a minimum, the professional report shall consider the following factors in assigning the ESA value for a particular area:
  - Physical features:
    - ecosystem inventories and mapping:
      - including any and all past environmental assessments on the property and adjacent lots
      - Biogeoclimatic Ecosystem Classification (BEC) zone
      - Sensitive Ecosystem Inventory (SEI)
      - Foreshore Inventory and Mapping (FIM)/Aquatic Habitat Index (AHI)
      - Sensitive Habitat Inventory and Mapping (SHIM)
      - Seral and structural state
      - Biodiversity Conservation Strategy[2]
      - Conservation Analysis for the Central Okanagan Valley[3]
    - landscape context
      - including contiguity to other ESAs (buffering function); edge effects; cumulative impacts; relation/dependence of ecosystems beyond its boundaries
    - unique or rare landforms or other aesthetic considerations
    - size of the lot under consideration

  - Indigenous plant, animal species and plant communities:
    - suitability for rare species (red- and blue-listed species provincially and species-at-risk federally)
    - critical and specialized habitat features including but not limited to: breeding, denning, roosting, nesting, spawning areas; migration routes/stop-overs; hibernacula; connection, movement corridors, habitat connectivity; reported sightings of uncommon species and species-at-risk; winter range; wetland/aquatic habitats; fisheries sensitive zones; riparian communities; floodplains.
    - species diversity/habitat complexity/habitat potential
    - rarity in the local/regional context

  - Sensitivity:
    - ability to tolerate anthropogenic disturbances
    - resilience to imposed stresses on an ecosystem
    - current condition such as biological integrity
    - potential for rehabilitation or recovery after disturbance
    - long-term impacts on habitat values and ecosystem functionality
    - severity or extent of the disturbance.
- Stratifying ESAs will be completed from an objective approach relying on existing information and a professional understanding about the function requisites for respective wildlife, communities and ecosystems. The professional report must describe the rationale used to determine the biological value and the methodology used to rank ecological sensitivity such that the

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2 *Forthcoming from OCCP*

3 *Haney and Iverson, 2009*

rankings and weightings will be reproducible and transparent. The specific criteria/rating system developed and used in the evaluation must be appended to the EIA. Where ESA evaluations require a more subjective approach, a clearly articulated explanation/rationale must be provided in the assessment.

6.7. **Phase 2 – Impact Assessment and Mitigation Phase -** Habitat or biological assessments completed to satisfy legal requirements of other levels of government (i.e. Riparian Areas Regulation) may be included within the EIA, but should be identified as to the requirements they are addressing, and their relationship to any City of West Kelowna requirements. This assessment should:

1. Consider surrounding lands, and their uses and impacts in a Cumulative Impact Analysis. In most cases on small parcels of land, individual environmental impacts may be small and therefore difficult to measure and/or assess, or seem negligible in terms of total impact. However, cumulative impacts of the same nature on adjacent lands, or all similarly-zoned land, or all land with similar future generalized use, may be large or extreme. The City can provide consultants with GIS files of zoning, future land use and ecosystem inventories to assist in the Cumulative Impact Analysis.

2. Recommend environmental works in order to mitigate fish, wildlife or environmental impacts (i.e. by providing modifications to development design, increased buffers, fencing, footprint, timing, equipment, or providing on/off site habitat or environmental improvements to avoid or minimize adverse impacts);

3. Provide 'typical' design drawings in addition to text. The intent is to apprise other members of the development team of the technical considerations that need to be incorporated into the design.

4. Provide improved or new fish, wildlife or environmental enhancement opportunities;

5. Provide details stating how the works or strategies for mitigation and/or enhancement will be carried out and provide approximate cost estimates.

7. Incomplete or Deficient Assessments

If it is determined by the General Manager of Development Services that an assessment is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected assessment.

SCHEDULE 1 – PART B: EIA SPECIFIC TO AQUATIC ECOSYSTEM – *DPA 5*

1. Description

In addition to the requirements outlined in Part A of this Schedule for a generic Environmental Impact Assessment, applicants seeking an Aquatic Ecosystem Development Permit (under Development Permit Area 5 of the City of West Kelowna Official Community Plan) shall also include the following requirements outlined in this section. The assessment must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Professional Qualifications

2.1. The assessment must be prepared by a Registered Professional Biologist licensed in BC, unless otherwise approved by the General Manager of Development Services. Other professionals listed below may be required to be part of the assessment team depending on the location and scale of the proposed development, unless otherwise approved by the General Manager of Development Services.

2.2. A Qualified Environmental Professional (QEP) licensed in BC will be required to prepare a Riparian Assessment as per Riparian Area Regulations, and establish a streamside protection and enhancement area.

1. A Professional Hydrologist licensed in BC will be required to prepare any reports in circumstances where the hydrological condition has been or may be significantly disturbed by the proposed development.

2. A Registered Professional Biologist licensed in BC will be required to determine a suitable leavestrip as identified in 8.2(11).

3. The consultant(s) should have an understanding of wildlife biology, especially for species at risk, geomorphology, environmental assessment, and development planning in British Columbia. Specific expertise in Okanagan Valley wildlife species, wildlife habitat, and ecosystems is required.

3. Basic Assessment Requirements

3.1. A statement of how the proposal addresses the Provincial Best Management Guidelines (as referenced in the DWK OCP Section 4.3.1) and assessment methodologies pertaining to aquatic habitats, groundwater management and drinking water protection.

3.2. An environmental assessment of the proposed drainage, sediment and erosion control, storm drainage systems and slope stability (consistent with DWK's Subdivision and Development Servicing Bylaw).

3.3. The identification and assessment of sensitive ecosystems on the site (include references to DWK's Sensitive Ecosystem Inventory and Sensitive Habitat Inventory and Mapping as applicable).

3.4. An assessment of the wildlife values of the site.

3.5. The identification and the location of buffers required to protect sensitive terrestrial ecosystems, including recommendations for fencing along buffers where adjacent development and activity is anticipated.

3.6. The identification of, and measures required to protect active bird nests and the nests of eagles, peregrine falcons, ospreys, burrowing owls or herons, including minimum buffers in accordance with the Provincial Environmental Best Management for Urban and Rural Land Development.

3.7. Where wetlands, riparian areas, and broadleaf woodlands exist within the development area, include mechanisms to ensure the proper hydrological function is maintained, as prepared by a hydrologist and/or hydro-geologist.

3.8. Demonstrate how post-development the site will maintain normal wetland and water processes such as flooding, seasonal drawdown, and groundwater recharge.

3.9. Where a development site has erosion potential, slope stability hazards and/or is within Development Permit Area 4 – Hillside as per the City of West Kelowna's Official Community Plan, an assessment of measures to address these issues by a Professional Engineer licensed in BC or a Geoscientist licensed in BC in accordance with Schedule 6.

3.10. The identification of locations of intact riparian vegetation, as well as plans for maintenance of the vegetation, or restoration where the site has been disturbed or where invasive weeds have intruded.

3.11. Determination of a suitable leavestrip for the proposed development site. A Registered Professional Biologist should determine the location and width of leavestrips in accordance with the following:

1. Whether the watercourse is fish bearing.
2. Whether the watercourse has downstream water intakes.
3. The proximity to stream or shore spawning areas.
4. The location of natural wetland, riparian and broadleaf woodland ecosystem communities.
5. The location of important denning or nesting habitat.
6. Ecosystem continuity off-site and in the larger area.
7. The potential impact of existing and proposed land uses on the subject property.
8. The potential impact of existing and proposed land uses on adjacent lands.
9. Where applicable, potential impact of livestock storage, onsite septic disposal, fuel storage, aggregate extraction, or other sources of potential surface or groundwater contamination.
10. The extent of land clearing, berming or removal of vegetation and topsoil.
11. The natural slope of the land.
12. The minimum requirements of the Provincial Riparian Areas Regulation.

13. For agricultural operations, the Ministry of Agriculture Agricultural Building Setbacks from Water Courses in Farming Areas (Order No. 82.400-1).

14. Other DPA 5 Guidelines as per the City of West Kelowna Official Community Plan.

3.12. A plan for connectivity of leavestrips and natural areas. Networks of leavestrips, natural areas and foreshore may provide for public access where such access is designed in a way that is not detrimental to the natural environment.

3.13. The timing of site work and rehabilitation.

3.14. The assessment shall adhere to the Aquatic Ecosystem Development Permit Area Guidelines (Section 4.3.6) and the General Guidelines (Section 4.3) of the City of West Kelowna Official Community Plan.

3.15. An Environmental Management Plan as per Schedule 3.

SCHEDULE 1 – PART C: EIA SPECIFIC TO SENSITIVE TERRESTRIAL ECOSYSTEM – *DPA 6*

1. Description

In addition to the requirements outlined in Part A of Schedule 1 for a generic EIA, applicants seeking a Sensitive Terrestrial Ecosystem Development Permit (under Development Permit Area 6 of the City of West Kelowna Official Community Plan) shall include the following requirements outlined in this section. The assessment must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Professional Qualifications

2.1. Applicants for a DPA 6 must provide an Environmental Assessment prepared by a Registered Professional Biologist licensed in BC together with other professionals, as the project warrants, unless otherwise approved by the General Manager of Development Services. The consultant(s) should have an understanding of wildlife biology, especially for species at risk, geomorphology, environmental assessment, and development planning in British Columbia. Specific expertise in Okanagan Valley wildlife species, wildlife habitat, and ecosystems is highly preferred.

3. Basic Assessment Requirements

3.1. An environmental assessment of the proposed drainage, sediment, and erosion control, storm drainage systems, and slope stability (consistent with DWK's Subdivision and Development Works and Servicing Bylaw).

3.2. The identification and assessment of sensitive ecosystems on the site (include references to DWK's Sensitive Ecosystem Inventory and Sensitive Habitat Inventory and Mapping).

3.3. The identification of stands of trees and individual trees where they have environmental value and include mechanisms for protection during and post construction.

3.4. An assessment of the wildlife values of the site.

3.5. The identification and the location of buffers required to protect sensitive terrestrial ecosystems, including recommendations for fencing along buffers where adjacent development and activity is anticipated.

3.6. The identification of, and measures required to protect active bird nests and the nests of eagles, peregrine falcons, ospreys, burrowing owls or herons, including minimum buffers in accordance with the Provincial Environmental Best Management for Urban and Rural Land Development.

3.7. Where wetlands, riparian areas, and broadleaf woodlands exist within the development area, include mechanisms to ensure the proper hydrological function is maintained, as prepared by a Hydrologist and/or Hydrogeologist.

3.8. An assessment of how the development site can help restore the natural cycle of low intensity fire once common to the Okanagan prepared by a qualified professional with experience in mitigating wildfire risk.

3.9. Where a development site has erosion potential or slope stability hazards, assessment of measures to address these issues by a Professional Engineer with experience in geotechnical engineering licensed in BC or a Geoscientist licensed in BC as per Schedule 6.

3.10. A plan for restoration of the site where the site has been disturbed or where invasive weeds have intruded.

3.11. The timing of site work and rehabilitation.

3.12. The assessment shall adhere to the Sensitive Terrestrial Ecosystem Development Permit Area Guidelines (Section 4.3.7) as well as the General Guidelines (Section 4.3) of the City of West Kelowna Official Community Plan.

3.13. An Environmental Management Plan as per Schedule 3.

SCHEDULE 2 – EIA -SPECIFIC TO GROUNDWATER MANAGEMENT ASSESSMENT

1. Description

A Groundwater Management Assessment evaluates pre- and post-development groundwater conditions including the extent and degree of existing contamination. A Groundwater Management Assessment is typically required at the time of subdivision or rezoning. A Groundwater Management Assessment may be a standalone study or be included as part of an Environmental Impact Assessment (see Schedule 1). Applicants submitting a Groundwater Management Assessment may also be required to submit an Environmental Management Plan as per Schedule 3.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Assessments are to be prepared, signed and sealed by a Professional Engineer licensed in BC with experience in hydrogeology, unless otherwise approved by the Director of Engineering.

4. Professional Standards

4.1. An original signed and sealed assessment must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the assessment must be identified. The person or corporation who provided the funding or who requested the assessment to be completed must be identified.

4.2. Methods used in the assessment must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The assessment must include the following information:

1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff as outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the assessment must be identified in the assessment

or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable OCP designation, Zoning category, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the assessment. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Map of the study area demonstrating the proximity to designated environmentally sensitive areas such as those previously identified in the City of West Kelowna Official Community Plan (or other documents as available) and any newly identified environmentally sensitive areas. These include hillside, aquatic ecosystem, and sensitive terrestrial ecosystem development permit areas, watercourses, and updated sensitive ecosystem inventory locations (such as Foreshore Inventory Mapping, Sensitive Ecosystem Inventory, Sensitive Habitat Inventory and Mapping, etc.).

5.7. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.8. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger

drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Assessment Requirements

6.1. The assessment must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The assessment must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The assessment must take into consideration existing off-site developments and the impact these developments may have on the subject property.

A Groundwater Management Assessment is typically undertaken in two parts: an environmental review and a hydrogeological assessment.

6.4. An environmental review of the development site must:

1. Include all available information from previous well drilling;
2. Assess the predevelopment groundwater conditions;
3. Identify and map all natural spring locations;
4. Identify existing and potential groundwater recharge/discharge areas;
5. Include recommendations for groundwater management; and
6. Assess, map, and discuss anticipated post-development groundwater conditions.

6.5. The hydrogeological assessment must:

1. Assess predevelopment groundwater conditions including identification of natural springs, description of the hydrogeology and vulnerability of aquifers, map of the capture zone, and identification of connections between ground and surface water;
2. Assess the anticipated post development situation with respect to groundwater;
3. Identify potential contaminants; and
4. Include recommendations for managing contaminant sources to provide direction for future permitted land uses and/or development proposals on the site.

7. Incomplete or Deficient Assessments

If it is determined by the Director of Engineering that an assessment is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected assessment.

SCHEDULE 3 – ENVIRONMENTAL MANAGEMENT PLAN

1. Description

An Environmental Management Plan generally outlines how the environmental impacts will be managed, mitigated and monitored. An Environmental Management Plan may be a stand-alone study or may be required to be submitted in conjunction with an Environmental Impact Assessment. Environmental Management Plans are typically required at the time of subdivision, rezoning and development permit application. If the Environmental Management Plan is triggered by a development permit application, the plan must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Plans are to be prepared, signed and sealed by a Registered Professional Biologist licensed in BC, unless otherwise approved by the General Manager of Development Services.

4. Professional Standards

4.1. An original signed and sealed plan must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the plan must be identified. The person or corporation who provided the funding or who requested the plan to be completed must be identified.

4.2. Methods used in the plan must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The plan must include the following information:

1. All professional staff directly involved in the technical direction of the p and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the plan must be identified in the plan or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the plan. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Map of the study area demonstrating the proximity to designated environmentally sensitive areas such as those previously identified in the City of West Kelowna Official Community Plan (or other documents as available, such as an Environmental Assessment) and any newly identified environmentally sensitive areas. These include hillside, aquatic ecosystem, and sensitive terrestrial ecosystem development permit areas, watercourses, and updated sensitive ecosystem inventory locations (such as Foreshore Inventory Mapping, Sensitive Ecosystem Inventory, Sensitive Habitat Inventory and Mapping, etc.).

5.7. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.8. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Plan Requirements

6.1. The plan must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The plan must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The plan must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. The Plan should include a monitoring plan to observe and evaluate the environmental works identified in the Environmental Impact Assessment as follows:

1. Provide measurable parameters that will help establish whether the development has caused impacts or that mitigation was actually achieved and successful. Monitor the recommended environmental works identified in the Environmental Impact Assessment to determine if the improvements avoided or minimized adverse environmental impacts.

2. Identify who is accountable for potential impacts that might occur, and who would be responsible for unintended but foreseeable impacts.

3. Identify who (i.e. agencies, departments, developers and/or personnel) will be responsible for monitoring potential impacts, and propose a monitoring schedule including identifying the expertise of personnel required to perform the monitoring. Provide a framework for future monitoring, including cost estimates and time frames for the collection of data.

4. All mitigation, restoration, and compensation prescriptions will include clearly articulated performance standards that are based on the best available science and that reflect the structural and functional objectives of projects.

7. Incomplete or Deficient Plans

If it is determined by the General Manager of Development Services that a plan is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected plan.

SCHEDULE 4 – WILDFIRE HAZARD ASSESSMENT

1. Description

A Wildfire Hazard Assessment evaluates the susceptibility of the subject property to wildfire from conditions both on and off-site, including neighbouring lands that may present a wildfire hazard. A Wildfire Hazard Assessment is typically required at the time of subdivision, rezoning or development permit application. If the Wildfire Hazard Assessment is triggered by a development permit application, the assessment must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Assessments are to be prepared, signed and sealed by a Registered Professional Forester (RPF) licensed in BC specializing in forest wildfire assessments, unless otherwise approved by the General Manager of Development Services.

4. Professional Standards

4.1. An original signed and sealed assessment must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the assessment must be identified. The person or corporation who provided the funding or who requested the assessment to be completed must be identified.

4.2. Methods used in the assessment must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The assessment must include the following information:

1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the assessment must be identified in the assessment or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the assessment. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.7. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

6. Basic Assessment Requirements

6.1. The assessment must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The assessment must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The assessment must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. The assessment must utilize the supported assessment methodology of the BC Ministry of Forests, Lands and Natural Resource Operations.

6.5. The assessment must include consideration of a range of factors including but not limited to: fuel hazards, history of wildfire occurrence, and existing and proposed structures.

6.6. The assessment must evaluate the subject property for wildfire susceptibility as it pertains to the proposed land use or subdivision and not just the current land use.

6.7. The assessment must include evaluation of conditions both on and off-site including neighbouring lands that may present a wildfire hazard to the subject property.

6.8. The assessment shall specify how the proposal incorporates defensible space and building materials to form an appropriate buffer zone or protection buffer.

6.9. The assessment shall include fire hazard mitigation recommendations regarding site modification requirements and any other requirements for subdivision or new construction that may reduce the susceptibility of the subject property to wildfire.

6.10. Where a large remainder (i.e. a property greater than 8 ha) abuts a lot 1 ha in area or smaller, the wildfire hazard assessment must include methods for reducing wildfire hazard along the property line to a level of “moderate” or less and must also address management of the interface.

6.11. The assessment shall reference the Wildfire Interface Design Guidelines Section 4.3.8) as well as the General Guidelines (Section 4.3) to clarify how the proposal meets the guidelines.

6.12. The assessment shall adhere to the Natural Hazard Policies of the City of West Kelowna Official Community Plan (Section 3.7.2).

7. Incomplete or Deficient Assessments

If it is determined by the General Manager of Development Services that an assessment is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected assessment.

SCHEDULE 5 – AGRICULTURAL IMPACT ASSESSMENT

1. Description

Agricultural Impact Assessments determine if a development proposal will enhance or adversely affect existing and proposed agricultural activities on site and in the surrounding area. Agricultural Impact Assessments are typically required at the time of rezoning and applications under the Agricultural Land Reserve. Agricultural Impact Assessments may also be required for applications for boundary adjustments or for the removal of land from the Agricultural Land Reserve.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Assessments are to be prepared, signed and sealed by a Professional Agrologist registered in BC, unless otherwise approved by the General Manager of Development Services.

4. Professional Standards

4.1. An original signed and sealed assessment must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the assessment must be identified. The person or corporation who provided the funding or who requested the assessment to be completed must be identified.

4.2. Methods used in the assessment must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The assessment must include the following information:

1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

2. A 1-page biography or C.V. of each professional and technical staff outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the assessment must be identified in the assessment or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the assessment. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.7. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Assessment Requirements

6.1. The assessment must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The assessment must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The assessment must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. Briefly outline the history, type and extent of agricultural operations on the subject property (vegetative and crop cover, livestock type, agricultural buildings, etc.), including any recent changes.

6.5. Summarize any historical Agricultural Land Commission decisions regarding the subject property.

6.6. Describe and comment on any non-agricultural land uses for onsite and adjacent lands and indicate conflicts with existing and potential on-site agriculture. If agriculture is no longer taking place on the subject property and/or area, an estimate of what it may take to re-establish active agriculture on the subject property and/or area.

6.7. Describe and comment on adjacent land uses including the location and description of the type and intensity of surrounding agricultural and non-agricultural land uses (generally within a 5 km radius)

6.8. Describe and comment on site, structure and soil improvements completed in the past. Describe the proposed site, structure and soil improvements that may be possible and/or necessary (including estimated costs).

6.9. Assess and describe the agricultural capability of the subject property through on-site investigations and any available data from the Ministry of Agriculture and Lands. This assessment should include information on soils, micro-climate(s), assets and deficiencies of the parcel and any structures thereon.

6.10. Assess and describe the short and long-term impacts of the proposed use and its compatibility within an agricultural area and potential to cause secondary impacts on adjacent and nearby agricultural properties. This analysis should include a determination of the types and level of potential impacts that may result from the proposed development, including a description of the proposed impacts to the ALR boundary.

6.11. Identify the percentage of productive agricultural land that would be removed from or added to production as a result of the development proposal.

6.12. Describe and comment on the impact of severing or fragmenting agricultural land that may result from the development proposal (on site and neighbouring properties).

6.13. Estimate the value in the short and long-term of the loss of any agricultural production and mitigative measures to offset the loss. The flexibility of the site for different types of agricultural operations (i.e. alternative uses) should be considered in the assessment.

6.14. Consider the impact of the proposed use on drainage and irrigation (on site and neighbouring properties).

6.15. Consider the impact of the proposed use on environmentally sensitive areas.

6.16. Consider the impact of traffic (vehicular, pedestrian, equestrian and cycling) of the proposed use to determine if proposed traffic volumes will impede farmers moving vehicles between fields, the amount of any new farm traffic added to roads, and if recreational traffic will be kept out of agricultural land.

6.17. Examine possible alternative sites within the general area for the intended use that would avoid or lessen agricultural impacts (i.e. urban areas/industrial areas). If there are no alternative sites, the assessment should include a determination of mitigative actions that would be required if the proposal were to proceed (i.e. confining the development to areas with poor soil capability for agriculture).

6.18. Examine and report on what it would take to develop the site for:

1. Crops and by-products that would be new to the site and area;

2. Non-soil based agricultural options (i.e. vegetable or nursery greenhouse, etc.); and

3. Accessory farm uses (i.e. Bed and Breakfast, agri-tourism, on-farm processing, on-farm retail).

6.19. Examine and report on what it would take to use other financial models for farming such as:

1. Leasing to other farmers;

2. Joint ownership by two or more farmers;

3. Community supported agriculture;

4. Leased garden plots for urban residents; and

5. Other feasible financial models.

6.20. The assessment shall adhere to the Agricultural Policies (Section 3.3.8) of the City of West Kelowna Official Community Plan.

6.21. The Assessment shall reference the City of West Kelowna Agricultural Plan.

7. Incomplete or Deficient Assessments

If it is determined by the General Manager of Development Services that an assessment is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected assessment.

SCHEDULE 6 – GEOTECHNICAL STUDY

1. Description

A Geotechnical Study is required to assess slope stability on sites with a slope angle of 20% or greater for a minimum horizontal distance of 10 m or on sites that are otherwise identified as having a geotechnical hazard (i.e. identified hazardous areas, erosion potential areas, or floodplains). Geotechnical studies are typically required at the time of subdivision, rezoning, building permit application or development permit application. The study must clearly reference the legislative framework that triggered the Geotechnical Study and provide a clear description of the purpose of the Study. If the study is triggered by a development permit application, the study must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Studies are to be prepared, signed and sealed by a Professional Engineer with experience in geotechnical engineering licensed in BC or a Geoscientist licensed in BC, unless otherwise approved by the Director of Engineering.

4. Professional Standards

4.1. An original signed and sealed study must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the study must be identified. The person or corporation who provided the funding or who requested the study to be completed must be identified.

4.2. Methods used in the study must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The study must include the following information:

1. All professional staff directly involved in the technical direction of the study and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the study must be identified in the study or included

in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. The Geotechnical Engineer shall notify the City immediately if s/he becomes aware of any changes or new information which may cause the Geotechnical Engineer to conclude that unsafe conditions exist.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the assessment. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres) as well as the spot elevations, swales, knolls, ridgelines, bedrock outcrops, cliffs and slope transitions, seasonal and permanent watercourses, drainage routes, vegetation, top of bank, break lines, current and proposed roads and site grading.

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Map of the study area demonstrating the proximity to designated environmentally sensitive areas such as those previously identified in the City of West Kelowna Official Community Plan (or other documents as available, such as an Environmental Assessment) and any newly identified environmentally sensitive areas. These include hillside, aquatic ecosystem, and sensitive terrestrial ecosystem development permit areas, watercourses, and updated sensitive ecosystem inventory locations (such as Foreshore Inventory Mapping, Sensitive Ecosystem Inventory, Sensitive Habitat Inventory and Mapping, etc.).

5.7. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.8. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17” and 22” x 34”. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. If the subject property is proposed for residential development, the study must include a completed Appendix D: Landslide Assessment Assurance Statement from APEGBC’s Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC. and the professional completing the report shall complete Appendix D: Landslide Assessment Assurance Statement.

6. Basic Study Requirements

6.1. The study must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. If the subject property is proposed for residential development, the study must adhere to APEGBC’s Guidelines for Legislated Landslide Assessments for Proposed Residential Developments in BC and the professional completing the report shall complete Appendix D: Landslide Assessment Assurance Statement.

6.3. The study must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.4. The study must take into consideration existing off-site developments and the impact these developments may have on the subject property. The study must clearly establish that the proposed development will not have any impacts on adjacent properties.

6.5. If the study is triggered by a rezoning application, the calculations for the proposed conditions must be based on the maximum build out potential of the proposed zone (at the highest capacity use), unless limited through other means. Information on the maximum build out potential will be supplied by City Staff.

6.6. The Study must reference the legislative framework that has triggered the Geotechnical Study. For example:

1. If the Geotechnical Study is triggered by Section 86 of the *Land Title Act* at the time of subdivision, (i.e. the Approving Officer considers that the land is, or could reasonably be expected to be, subject to flooding, erosion, landslip or avalanche), the study must clearly state that the land may be used safely for the use intended if

the land is used in accordance with the conditions specified in the professional's study. The study must therefore clearly describe any mitigation requirements that are necessary to ensure the land may be used safely for the use intended.

2. If the Geotechnical Study is triggered by Sections 919.1 and 920 of the *Local Government Act* at the time of development permit (i.e. the property falls within Development Permit Area 4 – Hillside), the report must adhere to Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

3. If the Geotechnical Study is triggered by Section 56 of the *Community Charter* at the time of building permit, (i.e. the property is likely to be subject to flooding, mud flows, debris flows, debris torrents, erosion, land slip, rockfalls, subsidence or avalanche, etc.), the study must clearly state that the land may be used safely for the use intended if the land is used in accordance with the conditions specified in the professional's study. The study must therefore clearly describe any mitigation requirements that are necessary to ensure the land may be used safely for the use intended.

6.7. The Geotechnical Engineer will complete all necessary surface and subsurface investigations that they consider necessary to provide the review and design recommendations. The City will rely on the Geotechnical Engineer's analysis to prevent any damage to property and/or injury to persons from occurring as a result of problems with soil slippage, soil instability, stormwater management or groundwater seepage related to the proposed project.

6.8. The study will identify potential hazards to the subject land and to neighbouring properties from existing or proposed development.

6.9. The study will confirm that there will be no net decrease in overall slope stability (including seismic and static stabilities) resulting from the proposed development, and that off-site slope instabilities will be mitigated to provide for safe occupation and use of nearby lands.

6.10. Where a potential hazard is identified at the time of building permit review, a construction management plan must be developed and include the monitoring and reporting requirements by the Geotechnical Engineer.

6.11. Where a potential hazard is identified, specific geotechnical assurance, provision of insurance (both provided by the Geotechnical Engineer), and the provision of bonding (by the applicant) will be required to secure the safe completion of on-site and off-site works.

6.12. The Geotechnical Engineer will provide the review, design, and supervision such that, in the engineer's opinion, the site is suitable for the use intended and the proposed development does not compromise nor is likely to reduce the stability of the soil on-site or soil on lands which are adjacent or nearby, and will not cause or contribute to such soils becoming susceptible to land slip, land slide, rock fall, mud/land flow, debris flow, debris torrent, erosion, slumping, creeping, settling, avalanches or other such occurrence.

6.13. The City will require all development to include a level of safety of a 10% probability of failure occurring in a 50 year period (P(H) = 1/475) for a damaging landslide or the prevailing standard as set by the B.C. Building Code, whichever is more stringent.

6.14. The City will require all development to include a level of safety of a 0.5% probability of failure occurring in a 50 year period (P(H) = 1/10,000) for a life-threatening or catastrophic landslide.

6.15. The Geotechnical Engineer will provide a professional opinion that, in the event of any land slip, landslide, rock fall, mud flow, debris flow, debris torrent, erosion, slumping, settling, groundwater seepage, surface water accumulation, or other such occurrence, which occurs after the proposed development is completed, the extent of the property damage and damage to life and limb which occurs is not likely to be in any way any greater than the damage or harm which would occur prior to the development taking place.

6.16. The study shall adhere to the Hillside Guidelines (Section 4.3.5) as well as the General Guidelines (Section 4.3) of the City of West Kelowna Official Community Plan.

6.17. The assessment shall adhere to the Hillside Conservation and Natural Hazard Lands Policies of the City of West Kelowna Official Community Plan (Section 3.7.1 and 3.7.2).

6.18. Depending on the site conditions and proposed activities, stormwater management, flood impact assessments and/or hydrogeological studies may also be required.

7. Incomplete or Deficient Studies

If it is determined by the Director of Engineering that a study is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected study.

SCHEDULE 7 –TRAFFIC IMPACT ASSESSMENT

1. Description

The City of West Kelowna Traffic Impact Assessment (TIA) Terms of Reference document provides guidance to developers on the requirements for TIAs. This document summarizes when TIAs are required and the tasks and parameters that need to be included in the analysis based on the type, location, and size of the development. Appendix A includes a matrix TIA requirements for different types and sizes of developments.

The intent of the document is to streamline the process as much as possible and integrate the City of West Kelowna's requirements for TIAs with the Ministry of Transportation and Infrastructure (MoTI). Due to the nature of development, it is difficult to envisage and incorporate all possibilities and combinations of land use. Where a TIA is required, a scoping development meeting shall occur before any submission to confirm the needs of both agencies will be addressed in the study. Section 1.2 identifies circumstances for when the Ministry has joint authority with the City on development. It should also be noted that parking requirements are completed in another separate parking study.

Final submissions will require the Terms of Reference be included along with a checklist of confirming certain items of the Terms of Reference have been addressed. The checklist is to be signed by the developer's traffic engineer. Any updates made to the TIA to address City or Ministry comments shall include a letter identifying all comments, the response from the developer's traffic engineer, and how it has been addressed in the report (as applicable).

1.1. City of West Kelowna Requirements

For small developments that do not require traffic impact assessments based on size, the City reserves the right to require a study if there are any traffic related concerns that could be further impacted by the site. If a development size is altered following rezoning approval and covenant, the City may require a TIA or additional scope items. Conclusions, statements, and assumptions from the TIA are to be supported by data in a reasonable fashion.

1.2. Ministry of Transportation Requirements

The Ministry of Transportation and Infrastructure (Ministry) maintain responsibility over arterial highways within municipalities and as such are to be involved in the TIA process under certain circumstances. Within the City boundaries, Westside Road and Highway 97 are classified as Arterial Highways (as per Section 45 of the Transportation Act) and are designated as Controlled Access Highways (as per Section 48 of the Transportation Act). The Ministry has joint jurisdiction over the approval of land use in municipalities where changes to the land use within the Controlled Area (within 800m of a Controlled Access Highway Intersection as defined in Section 52(1) of the Transportation Act) may affect operations of Arterial Highways. The Ministry publication on *Planning and Designing Access to Developments* identifies circumstances where they have joint authority. They are as follows:

1) Land use changes through Zoning Bylaw under the Local Government Act or Local Services Act, within the Controlled Area; Pursuant to Section 52(1)&(3) of the Transportation Act. And Section 924 of the Local Government Act.
2) Development Permit where the land use is commercial or industrial and has a total area of more than 4500m^2 Gross Floor Area, and within the control area; Pursuant to Section 924(2) Local Government Act and Section 52(3) of the Transportation Act.
3) Amend an existing Land Use Contract within the Controlled Area; pursuant to Section 930(4) of the Local Government Act and Section 52(3) of the Transportation Act.

4) Direct access to be served from a Controlled Access Highway; pursuant to Sections 49, 50 & 51 of the Transportation Act.
5) Closure or reopening of municipal road within the Controlled Area; pursuant to Section 47 of the Transportation Act and Section 41 of the Community Charter.
6) Subdivision of lands adjacent to a Controlled Access Highway as designated under Section 48 of the Transportation Act; pursuant to Section 80 of the Land Title Act.
7) Provincial Permit within and upon Provincial Highway and Right of Way; pursuant to Section 62 of the Transportation Act.
8) Amendment to Heritage Revitalization Agreement within the Controlled Area; pursuant to Section 966(6)(b) of the Local Government Act.

Provided through the above noted legislation the Ministry exercises the right to apply Provincial standards, and accept higher standards where they apply, for all works on or near a provincially administered Highway. Ministry accepted standards, practices, guidelines can be found through this link: http://www.th.gov.bc.ca/publications/repopubs.htm and including, but not limited to the following Ministry Publications:

- BC Supplement to TAC
- Utility Policy Manual; Ministry of Transportation
- Standard Specification for Highway Construction
- Supplemental Sign Policy Manual
- Electrical & Traffic Engineering Manual
- Traffic Control Manual for Work on Road Ways
- Manual of Traffic Signs & Pavement Markings

External Resources include:

- ITE Trip Generation Report(newest edition)
- ITE Parking Generation (newest edition)

Note that for TIAs where the Ministry is an approving authority, ITE Trip Generation rates shall use the fitter curve equations as practical.

2. Process

The process uses an assortment of figures to guide the user to the terms of reference required for the development. **Figure 1** identifies the type of development. From the figure, follow the instructions to the next chart. Residential only developments go to **Section 3**, commercial to **Section 4**, and mixed-use to **Section 5**. In addition, capacity analysis requirements are summarized in **Section 6**.

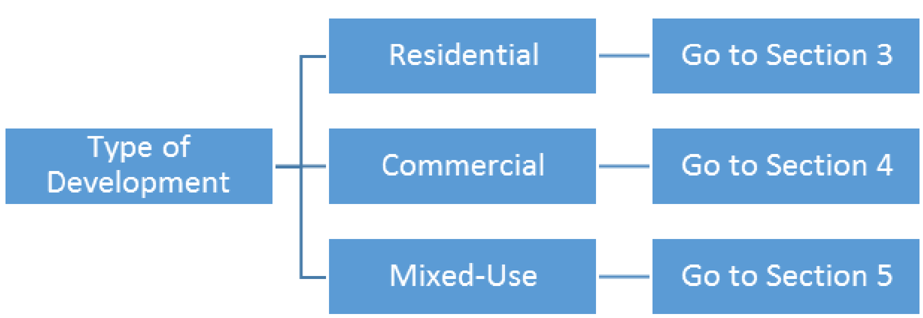

Figure 1: Select Development Type

3. Residential Development

Residential developments are categorized for their location and size for their terms of reference requirements. Developments in Westbank and Boucherie Centres are required to be smaller than other areas in order to not require a TIA.

Figure 2 indicates the terms of reference are to be used if a TIA is required.

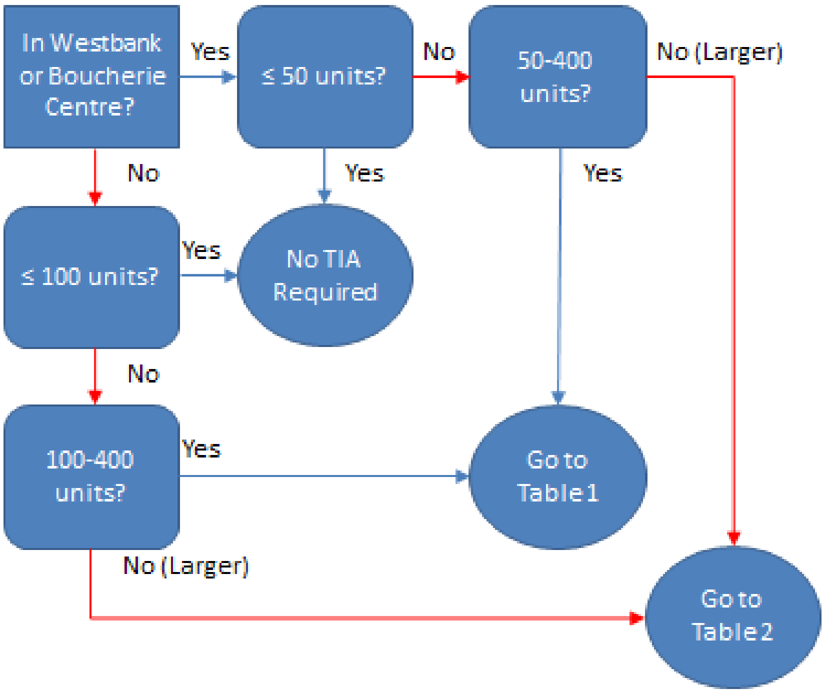

Figure 2: Residential Development Flow Chart

3.1. Residential Development

The terms of reference tables for residential developments are as follows. Developments with 100 units or less (50 or less in Westbank or Boucherie Centre) do not require a TIA.

Table 1 indicates terms of reference for developments of 101-400 units (51-400 in town centres).

Table 1: Moderate Residential Development Terms of Reference

Existing Conditions	Scope of Assessment – Intersections and roads to assess
	Traffic Counts (shall include dates / times and be no older than 3 years)
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 5 years
	Development phasing triggers for offsite improvements
	Background linear growth rates (may be different for the highway/arterial vs. side roads)
	Trip generation rates for development traffic
Modifications to generated traffic	Trip distribution
	Trip assignment
Capacity Analysis	Weekday AM and PM peak hours (must include school pick-up and drop-off times if within 500m of school property line)
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	Design vehicles
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Emergency access / egress
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

Table 2: Large Residential Development Terms of Reference

Existing Conditions	Scope of assessment – Intersections and roads to assess
	Traffic Counts (shall include dates/ times and be no older than 3 years)
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 10 years
	Development phasing triggers for offsite improvements
	Background linear growth rates (may be different for the highway/arterial vs. side roads)
	Trip generation rates for development traffic
	Depending on time frame and extent of phased developments, it may be prudent to require additional TIAs
Modifications to generated traffic	Trip distribution
	Trip assignment
Capacity Analysis	Weekday AM and PM peak hours (must include school pick-up and drop-off times if within 500m of school property line)
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Internal circulation of the site
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	For new roads: Road access option evaluation to ensure that development accesses main roads to improve network connectivity, safety, and constructability, not for only topographic convenience.
	Design vehicles
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Emergency access / egress
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

4. Commercial Developments

Commercially zoned developments have a wide variety of specific uses. **Figure 3** shows a flowchart for selecting the land use and the next flow chart or terms of reference to be addressed. It is assumed that fast food restaurants include drive-thru windows since the ITE Trip Generation Guide has limited data on establishments without drive-thru windows. The applicant must identify how many trips it will generate. Note that fast food establishments that are in joint jurisdiction of the Ministry (as per Section 1.2) shall be reviewed for Tim Hortons trip generations at 300-330 trips in the AM and 180-200 trips in the PM peak.

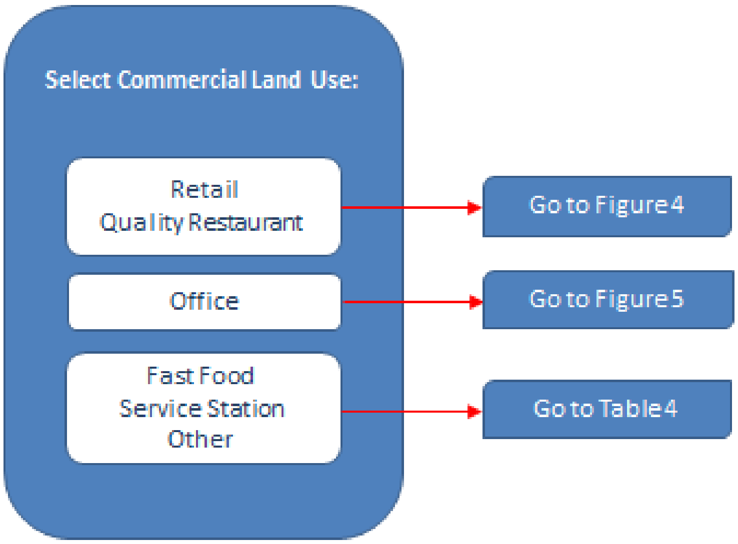

Figure 3: Select Commercial Land Use Type

Figure 4 and **Figure 5** show flow charts for determining which terms of reference table to be used for commercial retail and commercial office developments, respectively. The developments vary by their trip generation rates and their peak hours of activity.

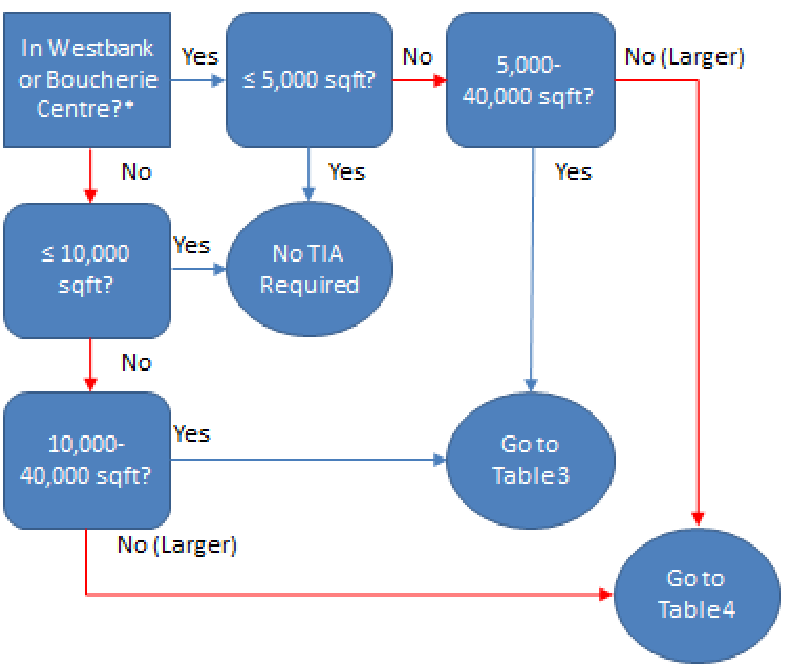

Figure 4: Select Commercial Retail Size

*Note: Any fast food developments (regardless of size) applicable for review by the Ministry shall be reviewed for Tim Hortons trip generation.

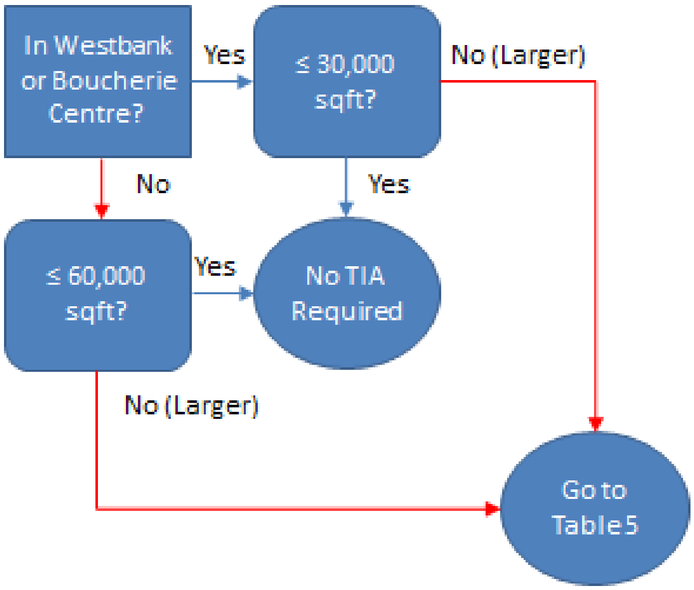

Figure 5: Select Commercial Office Size

Table 3: Moderate Commercial Retail Development Terms of Reference

Existing Conditions	Scope of assessment – Intersections and roads to assess
	Traffic Counts (shall include dates / times and be no older than 3 years)
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 5 years
	Development phasing triggers for offsite improvements
	Background linear growth rates
	Trip generation rates for development traffic
Modifications to the development generated traffic	Trip distribution
	Trip assignment
	Pass-by percentages
	Multi-purpose trip percentages
	Diverted link trips percentages
Capacity Analysis	Weekday PM peak hours and Saturday peak hour of generator
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	Design vehicles and circulation of large vehicles on-site
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

Table 4: Large Commercial Retail or Other Development Terms of Reference

Existing Conditions	Scope of assessment – Intersections and roads to assess
	Traffic Counts (shall include dates / times and be no older than 3 years
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 15 years
	Development phasing triggers for offsite improvements
	Background linear growth rates
	Trip generation rates for development traffic
	Depending on time frame and extent of phased developments, it may be prudent to require additional TIAs
Modifications to the development generated traffic	Trip distribution
	Trip assignment
	Pass-by percentages
	Multi-purpose trip percentages
	Diverted link trips percentages
Capacity Analysis	Weekday PM peak hours and Saturday peak hour of generator
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Internal circulation of the site
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	Design vehicles and circulation of large vehicles on-site
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

Table 5: Moderate-Large Commercial Office Development Terms of Reference

Existing Conditions	Scope of assessment – Intersections and roads to assess
	Traffic Counts (shall include dates / times and be no older than 3 years)
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 5 years
	Development phasing triggers for offsite improvements
	Background linear growth rates (may be different for the highway/arterial vs. side roads)
	Trip generation rates for development traffic
Modifications to generated traffic	Trip distribution
	Trip assignment
Capacity Analysis	Weekday AM and PM peak hours
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	Design vehicles and circulation of large vehicles on-site
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

5. Commercial Developments

Mixed-use developments are assessed for a combination of residential and commercial developments.

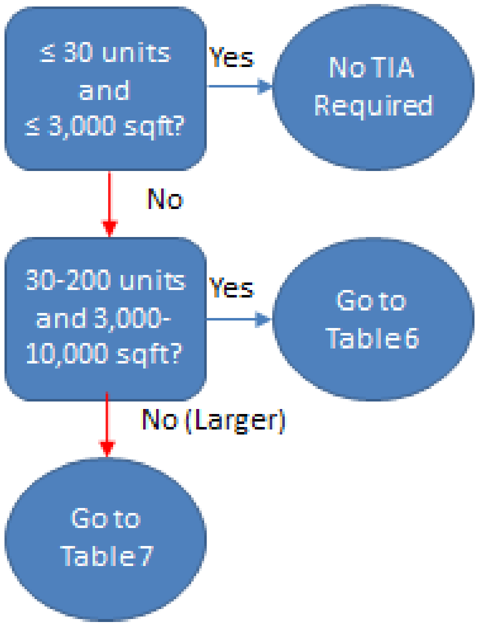

Figure 6: Mixed-Use Development Size

Table 6: Moderate Mixed-Use Development Terms of Reference

Existing Conditions	Scope of assessment – Intersections and roads to assess
	Traffic Counts (shall include dates / times and be no older than 3 years)
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 10 years
	Development phasing triggers for offsite improvements
	Background linear growth rates (may be different for the highway/arterial vs. side roads)
	Trip generation rates for development traffic
Modifications to the development generated traffic	Trip distribution
	Trip assignment
	Internal trips (if generating more than 200 trips)
	Pass-by percentages
	Multi-purpose trip percentages
	Diverted link trips percentages
Capacity Analysis	Weekday AM and PM peak hours (must include school pick-up and drop-off times if within 500m of school property line)
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	Design vehicles and circulation of large vehicles on-site
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

Table 7: Large Mixed-Use Development Terms of Reference

Existing Conditions	Scope of assessment – Intersections and roads to assess
	Traffic Counts (shall include dates / times and be no older than 3 years)
Impacts of Transportation System Changes	Planned and funded changes to occur
	Site Plan
	Access management strategy for the area (provided by the City)
Traffic Projections	Horizon years including build out plus 15 years
	Development phasing triggers for offsite improvements
	Background linear growth rates (may be different for the highway/arterial vs. side roads)
	Trip generation rates for development traffic
	Depending on time frame and extent of phased developments, it may be prudent to require additional TIAs
Modifications to the development generated traffic	Trip distribution
	Trip assignment
	Internal trip capture (rates and volumes)
	Pass-by percentages
	Multi-purpose trip percentages
	Diverted link trips percentages
Capacity Analysis	Weekday AM and PM peak hours (must include school pick-up and drop-off times if within 500m of school property line) and Saturday peak hour of generator
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS, and 95th percentile queues)
	Warrants for new signals and/or roundabouts
	Conduct analysis with Synchro and/or SimTraffic Analysis and provide files to City upon request
	Internal circulation of the site
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)
	Design vehicles and circulation of large vehicles on-site
	Design speeds (for new road segments)
	Parking requirements
Safety Analysis	Accident history (at existing intersections)
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety
	Sight distance analysis
Other Users	Pedestrians (On- and Off-Road Facilities)
	Cyclists (On- and Off-Road Facilities)
	Transit

6. Capacity Analysis Requirements

The capacity analysis for roadways has additional requirements for modelling traffic conditions in HCS, Synchro, and/or SimTraffic. Note that Ministry Requirements (Section 6.1) govern on controlled Highways). The City modelling parameters are:

- Vehicle length of 7.5m
- Heavy vehicle length of 12.5m for City roads
- Heavy vehicle percentage to be revised from 2% to site specific classification
- Peak hour factors no greater than 0.95
- Justifications for any changes to default Lost Time Adjust values
- Vehicle queue storage requirements are based on average vehicle length of 7.5m and heavy vehicle length of 12.5m (for City roads)
- SimTraffic Requirements:
  - Seeding 30 minutes
  - Recording 60 minutes
  - 5 runs for statistical randomness

Evaluation parameters for measures of effectiveness are:

- LOS C or better and v/c of 0.85 or better on through movements of higher order roads intersecting with lower order roads and LOS D or better ad v/c of 0.90 or better on lower order roads intersecting with higher order roads
- Indicate additional delays to pedestrians, cyclists, and transit users resulting from development in town centres and provide mitigation

Mitigation will require warrants for signals, roundabouts, roadway illumination, and left-turn lanes to be reviewed.

7. Capacity Analysis Requirements

Note that the Ministry has a Generic Terms of Reference for TIAs that is updated occasionally. It is the responsibility of the traffic engineer to acquire the most up-to-date materials.

APPENDIX A: TIA REQUIREMENT MATRIX

TASKS		Residential			Retail			Office		Mixed-Use		
		Small	Moderate	Large or Phased	Small	Moderate	Large or Phased	Small	Moderate-Larger	Small	Moderate	Large or Phased
		≤ 100(50)	100(50)-400	400+	≤ 10,000 (5,000) sqft	10,000-40,000 (5,000-40,000) sqft	40,000+ sqft	≤ 60,000 (30,000) sqft	60,000+ (30,000+) sqft	≤ 30 units and ≤ 3,000 sqft	31-200 units and 3,001-10,000 sqft	200+ units and 10,000+ sqft
Existing Conditions	Scope of assessment – Intersections and roads to assess	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Traffic Counts (shall include dates / times and be no older than 3 years		Y	Y		Y	Y		Y		Y	Y
Impacts of Transportation System Changes	Planned and funded changes to occur	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Site Plan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Access management strategy for the area (provided by the District)		Y	Y		Y	Y		Y		Y	Y
Traffic Projections	Horizon years including build out plus *x* years		5	10		10	15		10		10	15
	Development phasing triggers for offsite improvements		Y	Y		Y	Y		Y		Y	Y
	Background linear growth rates		Y	Y		Y	Y		Y		Y	Y
	Trip generation rates for development traffic from latest edition of ITE Trip Generation Guide		Y	Y		Y	Y		Y		Y	Y
	Large development requiring additional TIAs		Y	Y								Y
Modifications to the development generated traffic	Trip distribution		Y	Y		Y	Y		Y		Y	Y
	Trip assignment		Y	Y		Y	Y		Y		Y	Y
	Internal trips (If trip generation > 200 veh/hr)										Y	Y
	Pass-by percentages					Y	Y				Y	Y
	Multi-purpose trip percentages					Y	Y				Y	Y
	Diverted link trips percentages					Y	Y				Y	Y
Capacity Analysis	Peak Hour for Weekday AM (Including drop-off time for school property lines within 500m)		Y	Y					Y		Y	Y
	Peak Hour for Weekday PM (Including pick-up time for school property lines within 500m)					Y	Y		Y		Y	Y
	Peak Hour of Generator on Saturday					Y	Y				Y	Y
	Signalized and unsignalized intersections performance criteria objectives (v/c ratio, delay, LOS and queuing)		Y	Y		Y	Y		Y		Y	Y
	Warrants for new signals and/or roundabouts		Y	Y		Y	Y		Y		Y	Y
	Conduct analysis with Synchro and/or Sim Traffic Analysis and provide files to District upon request		Y	Y		Y	Y		Y		Y	Y
	Internal circulation of the site			Y			Y				Y	Y
	Left-turn bays are required for safety where peak hour left-turn volumes are (1) at least 40 vehicles/hr or (2) they meet Ministry Left-Turn Lane Warrants			Y		Y	Y		Y		Y	Y
Design criteria	Road classifications (Refer to Works and Services Bylaw No. 0120)			Y		Y	Y		Y		Y	Y
	Design vehicles and circulation of large vehicles on-site			Y			Y				Y	Y
	Design speeds (for new road segments)			Y			Y				Y	Y
	Parking requirements		Y	Y		Y	Y		Y		Y	Y
Safety Analysis	Accident history (at existing intersections)		Y	Y		Y	Y		Y		Y	Y
	Influence of development on known crash types/locations; mitigation to reduce impact of development with respect to safety		Y	Y		Y	Y		Y		Y	Y
	Sight distance analysis	Y	Y	Y	Y	Y	Y		Y		Y	Y
Other Users	Pedestrians (On- and Off-Road Facilities)		Y	Y		Y	Y		Y		Y	Y
	Cyclists (On- and Off-Road Facilities)		Y	Y		Y	Y		Y		Y	Y
	Transit		Y	Y		Y	Y		Y		Y	Y

SCHEDULE 8 – FUNCTIONAL SERVICING REPORT

1. Description

Functional Servicing Reports evaluate the effects of a proposed change in land use, subdivision or development on the City's municipal infrastructure, or alternatively, the suitability of any proposed (private) onsite servicing to support the proposed use. Functional Servicing Reports are typically required at the time of application for rezoning, subdivision, development permit or building permit. If the report is triggered by a development permit application, the report must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Reports are to be prepared, signed and sealed by a Civil Engineer licensed in BC, unless otherwise approved by the Director of Engineering.

4. Professional Standards

4.1. An original signed and sealed report must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the report must be identified. The person or corporation who provided the funding or who requested the report to be completed must be identified.

4.2. Methods used in the report must be repeatable and based on agency and/or scientific standards appropriate to the scope of proposed development and the landscape being assessed. The report must include the following information:

1. All sources of data and methods contributing to the results, interpretations and recommendations contained in the report must be identified in the report or included in appendices.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the report. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.5. Engineered plans showing all existing and proposed infrastructure for the proposed development.

5.6. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.7. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17” and 24” x 36”. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Report Requirements

6.1. The report must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The report must identify and assess existing and proposed infrastructure required for the proposed development, subdivision or building permit.

6.3. The report must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. If the report is triggered by a rezoning application, the calculations for the proposed conditions must be based on the maximum build out potential of the proposed zone (at the highest capacity use), unless limited through other means. Information on the maximum build out potential will be supplied by City Staff.

6.5. The report shall confirm all requirements and design specifications as per the Subdivision and Development Servicing Bylaw No. 704 and other regulations as applicable (MMCD standards, Interior Health, etc.).

6.6. The report shall outline the design assumptions, and the overall impact on the existing trunk and local municipal service capacities, such as water distribution systems, reservoirs and pressure zones, water consumption requirements, lift stations, trunk and local sanitary sewers, wastewater treatment plant and stormwater management facilities.

6.7. The report shall clearly define available capacities, as well as any required offsite infrastructure improvements or system expansions necessary to support the proposed land use, subdivision or development.

6.8. The assessment shall reference the Infrastructure and Services Policies of the City of West Kelowna Official Community Plan (Section 3.6) to clarify how the proposal meets the policies.

7. Incomplete or Deficient Reports

If it is determined by the Director of Engineering that a report is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected report.

SCHEDULE 9 – STORMWATER MANAGEMENT REPORT

1. **Description**
   A Stormwater Management Report evaluates the effects of a proposed development on the receiving storm drainage system. The report establishes the hydrology, drainage, and stormwater quality of the subject site under existing conditions, identifies the impacts of the proposed development on these items and recommends solutions to mitigate and manage these impacts. A Stormwater Management Report is typically required at the time of subdivision, rezoning, development permit or building permit. If the report is triggered by a development permit application, the report must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. **Consultation with City Staff**
   The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. **Professional Qualifications**
   Reports are to be prepared, signed and sealed by a Professional Engineer licensed in BC with experience in hydrologic and hydraulic analysis, unless otherwise approved by the Director of Engineering.

4. **Professional Standards**
   4.1. An original signed and sealed report must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the report must be identified. The person or corporation who provided the funding or who requested the report to be completed must be identified.

   4.2. Methods used in the report must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The report must include the following information:

      1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

      2. A 1-page biography or C.V. for each professional and technical staff outlined above.

      3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

      4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the study must be identified in the study or included in

appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the study. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Map of the study area demonstrating the proximity to designated environmentally sensitive areas such as those previously identified in the City of West Kelowna Official Community Plan (or other documents as available, such as an Environmental Assessment) and any newly identified environmentally sensitive areas. These include hillside, aquatic ecosystem, and sensitive terrestrial ecosystem development permit areas, watercourses, and updated sensitive ecosystem inventory locations (such as Foreshore Inventory Mapping, Sensitive Ecosystem Inventory, Sensitive Habitat Inventory and Mapping, etc.).

5.7. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.8. Drawings showing:

1. The location of any existing on and off-site stormwater management infrastructure, including natural watercourses, streams, ponds, springs, etc.

2. The identification of tributary (upstream) drainage areas and major off-site drainage routes;

3. The proposed development layout and stormwater management system(s), including overland emergency drainage routes from all low points on any proposed road;

5.9. Copies of consultation with the Ministry of Environment regarding any concerns or background information;

5.10. Report summarizing the stormwater management concepts, design criteria and pertinent analysis as per the basic report requirements listed below.

5.11. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17” and 24” x 36”. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Report Requirements

6.1. The report must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The report shall confirm all requirements and design specifications as per the Subdivision and Development Servicing Bylaw No. 704 and MMCD standards.

6.3. The report must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.4. The report must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.5. The report should be conservative in calculation, coupled with sound engineering judgment, but the economic aspects of design should not be overlooked. Low maintenance and operational simplicity are preferred.

6.6. If the report is triggered by a rezoning application, the calculations for the proposed conditions must be based on the maximum build out potential of the proposed zone (at the highest capacity use), unless limited through other means. Information on the maximum build out potential will be supplied by City Staff.

6.7. Depending on the scope of the development proposed, the report may require a two-phased approach (preliminary and detailed design phases). Specifications for detailed design are found in the Subdivision and Development Works and Servicing Bylaw.

6.8. The report shall adhere to the Stormwater Management Policies of the City of West Kelowna Official Community Plan (Section 3.6.1).

7. Incomplete or Deficient Reports

If it is determined by the Director of Engineering that a report is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected report.

SCHEDULE 10 – VISUAL IMPACT ASSESSMENT

1. Description

A Visual Impact Assessment estimates the potential visual effect of the proposed site works by demonstrating pre- and post-development conditions. Visual Impact Assessments are typically required as part of rezoning and development permit applications. If the assessment is triggered by a development permit application, the assessment must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna’s Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Assessments are to be prepared, signed and sealed by a Landscape Architect licensed in BC, unless otherwise approved by the General Manager of Development Services.

4. Professional Standards

4.1. An original signed and sealed assessment must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the assessment must be identified. The person or corporation who provided the funding or who requested the assessment to be completed must be identified.

4.2. Methods used in the assessment must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The assessment must include the following information:

1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the assessment must be identified in the assessment or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the assessment. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Site Profiles and Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. When development is occurring on or near slopes that are greater than 20%, a topographic survey may be required. The survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Development concept(s) should be presented together with an assessment of constraints and opportunities and a plan of implementation for each concept.

5.6. 3D Format – concept(s) to be illustrated in a 3-dimensional format.

5.7. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.8. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.9. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. . Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Assessment Requirements

6.1. The assessment must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The assessment must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The assessment must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. If the report is triggered by a rezoning application, the calculations for the proposed conditions must be based on the maximum build out potential of the proposed zone (at the highest capacity use), unless limited through other means. Information on the maximum build out potential will be supplied by City Staff.

6.5. The assessment shall be based on standard methodology such as that applied by Ministry of Forests (i.e. Visual Impact Assessment Guidebook), Ministry of Transportation and Infrastructure (Manual of Aesthetic Design Practice) and City of West Kelowna Official Community Plan (i.e. Development Permit Guidelines).

6.6. The assessment shall include an inventory that identifies visual sensitivity units occurring on the property, visual factors, site factors, ecological and management factors. The inventory will provide the basis of visual quality analysis, interpretation and development of design concepts.

6.7. The assessment must show proposed buildings and structures, road alignments, extent of cuts and fills, and site features to be preserved or removed, and must show the post-development impact on viewscapes.

6.8. The assessment must demonstrate the visual impact of the proposed development, in 3D modeling (i.e. massing) from a multitude of angles in order to demonstrate the impact on viewscapes in the context of the surrounding community.

6.9. Visual quality shall be integrated into the development design based on analysis and interpretation of the completed inventory and the design guidelines of the Official Community Plan.

7. Incomplete or Deficient Assessments

If it is determined by the General Manager of Development Services that an assessment is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected assessment.

SCHEDULE 11 – TREE ASSESSMENT STUDY

1. Description

Tree Assessment Studies assess hazard trees, mature stands of trees and/or significant landmark trees. A tree assessment study may be required as a stand-alone study or as part of another study such as an Environmental Impact Assessment and/or a Wildfire Hazard Assessment. A Tree Assessment Study is typically required at subdivision, rezoning or development permit application. If the assessment is triggered by a development permit application, the assessment must reference Section 4.3 Development Permit Areas and Guidelines of City of West Kelowna's Official Community Plan.

2. Consultation with City Staff

The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. Professional Qualifications

Studies are to be prepared, signed and sealed by an ISA Certified Arborist licensed in BC and/or a Qualified Environmental Professional licensed in BC, unless otherwise approved by the General Manager of Development Services.

4. Professional Standards

4.1. An original signed and sealed study must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the study must be identified. The person or corporation who provided the funding or who requested the study to be completed must be identified.

4.2. Methods used in the study must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The study must include the following information:

1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

2. A 1-page biography or C.V. for each professional and technical staff outlined above.

3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the study must be identified in the study or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. Deliverables

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the study. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Cross Sections in sufficient numbers to demonstrate terrain conditions prior to the proposed site disturbance and intended conditions post-development. A topographic survey must show natural slope contours and the proposed contours post-development (at appropriate contour levels of 1 to 5 metres).

5.5. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.6. Map of the study area demonstrating the proximity to designated environmentally sensitive areas such as those previously identified in the City of West Kelowna Official Community Plan (or other documents as available, such as an Environmental Assessment) and any newly identified environmentally sensitive areas. These include hillside, aquatic ecosystem, and sensitive terrestrial ecosystem development permit areas, watercourses, and updated sensitive ecosystem inventory locations (such as Foreshore Inventory Mapping, Sensitive Ecosystem Inventory, Sensitive Habitat Inventory and Mapping, etc.).

5.7. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.8. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Study Requirements

6.1. The assessment must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The assessment must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The assessment must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. The assessment must include a description of the general site conditions and the general forest composition and health, including an inventory of existing trees.

6.5. **Hazard Trees** - The assessment shall:

1. Include a visual tree assessment that assesses trees for obvious defects and emerging problems, site conditions and other factors that are visually apparent and could contribute to tree failure, impact to a target and/or significant damage;

2. Based on the visual tree assessment, record all trees that require hazard abatement work;

3. Provide photographs of hazard trees and any defects;

4. Include recommendations for the removal of any hazard tree; and

5. Provide a monitoring plan for the removal of hazard trees.

6.6. **Mature, Significant and/or Landmark Trees** - The assessment shall:

1. Conduct a visual tree assessment that assesses trees for obvious defects and emerging problems, site conditions and other factors that are visually apparent and could contribute to tree failure, impact to a target and/or significant damage.

2. Based on the visual tree assessment, record all trees that may be considered mature trees and/or are significant/landmark trees.

3. Provide photographs of mature, significant and/or landmark trees and any defects.

4. Detail the measures required to preserve and maintain trees and associated understory vegetation before, during and after site development.

7. Incomplete or Deficient Studies

If it is determined by the General Manager of Development Services that an assessment is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected assessment.

SCHEDULE 12 – LOCAL COMMUNITY SERVICE STUDY

1. **Description**
   A local community service study assesses the community services and facilities available to a neighbourhood or study area and determines if the existing supply will meet the demand of the proposed development. Local Community Service Studies are typically required when applying for a Comprehensive Development Plan or large-scale OCP amendment application.

2. **Consultation with City Staff**
   The information contained within this schedule is intended as a guide only and is not a comprehensive list of requirements. The applicant will be required to work with staff to review and confirm the Terms of Reference for the specific proposed project. In some instances (i.e. smaller developments) it may only be necessary to assess some of the issues contained within this schedule. In other instances (i.e. larger developments) the applicant may be required to address additional issues not contained within this schedule. Every effort will be made to clarify the requirements in the early phases of each development application. It is the responsibility of the applicant to confirm the specific requirements prior to initiating the assessment and to ensure that all applicable guidelines, policies, bylaws, master plans and other regulations are strictly followed.

3. **Professional Qualifications**
   Studies are to be prepared, signed and sealed by a Professional approved by the General Manager of Development Services.

4. **Professional Standards**
   4.1. An original signed and sealed study must be retained on file with the City of West Kelowna (a photocopy signature and seal will not be accepted). The person or corporation who prepared the study must be identified. The person or corporation who provided the funding or who requested the study to be completed must be identified.

   4.2. Methods used in the study must be repeatable and based on agency and/or scientific standards appropriate to the scope of the proposed development and the landscape being assessed. The study must include the following information:

      1. All professional staff directly involved in the technical direction of the assessment and field assessments (where applicable).

      2. A 1-page biography or C.V. for each professional and technical staff outlined above.

      3. The level of effort in terms of personnel and time spent on site evaluations must be clearly stated including the time of year and length of site evaluations. Site conditions likely to be absent during the period of evaluation need to be documented and assessed by alternative methods.

      4. All sources of data and methods contributing to the results, interpretations and recommendations contained in the study must be identified in the study or included in appendices, either copies of hand-written field sheets or the data as entered in a digital format.

5. **Deliverables**

5.1. Site description including legal description (i.e. lot number, District lot, plan number, etc.), civic address(es) if applicable, OCP designation, Zoning, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated at the outset of the study. For large parcels, UTM coordinates of the site location where specific works will occur may be required.

5.2. Location Map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map. The locations of all community services and facilities identified in the inventory should be included on the location map.

5.3. Site Map(s) at an appropriate scale (minimum 1:200 and maximum 1:5,000) indicating the layout of the project components and activities. This information should be overlaid on the most current cadastral map outlining surrounding property boundaries. Map legends should show clear descriptions of all symbols used and must include a north indicator.

5.4. Site Plans/Sketches/Colour Photographs indicating the project location, site features and activities should be presented with relation to easily identifiable landmarks such as those found on accompanying maps.

5.5. Appropriate referencing of all image and data sources, with a clear indication of the date of when the information was developed to demonstrate that the most up-to-date information available was used to complete the relevant assessments.

5.6. **Final Submission** – shall include the following at a minimum:

1. 3 colour hard copies, signed and sealed by the appropriate professional as outlined in Section 2 of this Schedule.

2. 1 digital copy in .pdf format on CD or flash drive submitted with the report, including all mapping, documentation and appendices.

3. Plans and maps shall be submitted in colour format printed to scale as applicable. Hard copy submissions of any drawings shall be presented in 11” x 17”. Larger drawings (i.e. 24” x 36”) will also be accepted as long as each 24” x 36” is accompanied with an 11” x 17” sized map to enable copying. Any additional copies at a reduced size must be clearly marked ‘Not to Scale’.

4. Where available, digital copies of supporting information shall be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11.

5. All documents submitted (both digital and hardcopy) must be dated, including any subsequent revision dates.

6. Basic Study Requirements

6.1. The study must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices.

6.2. The study must reflect the site conditions prior to the proposed disturbance, including any previous site disturbance, and the anticipated site conditions post-development.

6.3. The study must take into consideration existing off-site developments and the impact these developments may have on the subject property.

6.4. Provide an overview of social, economic and demographic information including such information as: population data, housing data and local development activity.

6.5. Provide a detailed inventory of all community services and facilities within and adjacent to the prescribed study area including the following at a minimum:

1. Elementary and secondary schools;
2. Public libraries;
3. Proximity to public transit stops;
4. Community care facilities;
5. Community and recreation centres;
6. Parks, open space and natural areas;
7. Places of worship;
8. Social services; and
9. Other publicly accessible community meeting or recreation spaces.

6.6. Provide a description of the programs offered in the community services and facilities identified in 6.1. For example, highlight the programs offered, the size of facilities, the demand and capacity of the facilities and programs and who is served by the service or facility (i.e. age groups, etc.).

6.7. Provide a discussion on the ability of the service or facility to accommodate growth and recommendations for any new community services or facilities that may be required as part of the proposed development.

7. Incomplete or Deficient Studies

If it is determined by the General Manager of Development Services that a study is incomplete or deficient, the applicant will be notified in writing of the nature of deficiencies and the timeframe to resubmit the corrected study.