

TANGIBLE CAPITAL ASSETS CATALOGUE GUIDE

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1 INTRODUCTION

The Regional Municipality of Wood Buffalo has developed a Tangible Capital Asset Catalogue (AC) for the reporting of tangible capital assets that are contributed to the Municipality by developers through Development Agreements, or constructed on behalf of the Municipality through capital projects and acquisitions. The purpose of this Guide is to provide guidance on how to successfully complete the Asset Catalogue, and to facilitate development of a consistent inventory of assets and valuation methods.

2 BACKGROUND

Effective January 1, 2009, accounting standards require all municipalities to assign values to all tangible capital assets (TCA's) that have been contributed to them¹. The appropriate value that is to be assigned is considered to be its "fair value at the date of contribution."² Fair value is defined as "the amount of the consideration that would be agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act"³.

For assets contributed by Developers to the Regional Municipality of Wood Buffalo, actual costs incurred in the development of contributed assets serves as an effective and practical starting point to estimate asset fair value, provided that the associated contracts were negotiated in a competitive market and the market has not changed significantly during the period between contract negotiation and asset contribution to the Regional Municipality of Wood Buffalo.

For assets constructed on behalf of the Regional Municipality of Wood Buffalo through capital construction projects and acquisitions, the actual costs incurred through the construction contract based on tendered bid items serves as an effective and practical starting point to estimate asset fair value. However, unit prices from the tender form need to be adjusted to account for total project costs that are indirectly attributable to individual assets, as described below.

¹ Public Sector Accounting Board, PS-3150, January 2003

² PSAB PS-3150.05(b)

³ PSAB PS-3150.05(c)

3 ASSET VALUATION

What types of costs should be included in the valuation?

The Public Sector Accounting Board [PSAB] defines relevant cost as the gross amount of consideration given up to acquire, construct, develop or better a tangible capital asset, and includes all costs directly attributable to acquisition, construction, development or betterment of the tangible capital asset, including installing the asset at the location and in the condition necessary for its intended use⁴.

The term “directly attributable” is the key to determining whether a cost is to be allocated to an asset. A cost is considered to be directly attributable if it pertains to any activity that is necessary to prepare an asset for its intended use. These costs would not have been incurred other than to acquire, construct or develop the asset. It should also be noted that these types of costs are not limited solely to construction activity. According to PSAB “the activities necessary to prepare a tangible capital asset for its intended use encompass more than the physical construction of the tangible capital asset. They include the technical and administrative work prior to the commencement of and during construction”⁵.

Furthermore, “The cost of a tangible capital asset includes the purchase price of the asset and other acquisition costs such as installation costs, design and engineering fees, legal fees, survey costs, site preparation costs, freight charges, transportation insurance costs, and duties. The cost of a constructed asset would normally include direct construction or development costs (such as materials and labor) and overhead costs directly attributable to the construction or development activity.” Other examples of ‘eligible’ costs include: geotechnical engineering; demolition of existing properties (if applicable); environmental engineering; relevant fees (zoning, planning, building permits, sewer/storm connection fees etc); development and/or financial consulting; quality assurance (testing that the asset is functioning properly); directly attributable carrying costs incurred during the development period (e.g. interest, insurance); engineering, architectural, and other professional fees necessary for the acquisition or construction of the asset; construction management and inspection costs; mobilization and demobilization costs; site management costs such as environmental controls and traffic management; and any land registration fees and transfer taxes.

What types of costs should be excluded in the valuation?

Costs that are not considered to be directly attributable to prepare a tangible capital asset for its intended use are generally costs incurred for a common or joint purpose. Therefore these costs cannot be identified readily and specifically with an activity related to the acquisition, construction or development of an asset. Examples include, but are not limited to: indirect overhead/administrative costs, carrying costs, general design or study (not specific to the development stage), taxes (GST etc).

⁴ PSAB PS-3150.05(b)

⁵ PSAB PS-3150.10

How should 'non-construction' costs be allocated?

The Asset Catalogue will calculate the pro-rata amount of indirect 'non-construction' costs to be allocated to each individual asset identified within the Catalogue. See Section 6 "Using the Asset Catalogue Spreadsheet" for more guidance.

Generally, all indirect 'non-construction' costs are to be allocated along the same basis as construction costs. Direct construction costs from contractors are to be allocated in accordance with asset classifications consistent with the Asset Catalogue. Exceptions are to be applied in situations where specific non-construction expenditures are significant and can be directly traced to specific assets. In these situations, following the same allocation methodology as construction costs may compromise the accuracy of cost allocations.

The following table demonstrates one method for allocating non-construction costs or indirect costs that can not be directly attributed to a single asset (may be for more than one asset).

	Project Costs	% of Total Direct Costs	Allocation of Indirect Costs	Final Installed Asset Cost
DIRECT COSTS				
Tendered Asset 1	250,000	50%	100,000	350,000
Tendered Asset 2	150,000	30%	60,000	210,000
Tendered Asset 3	100,000	20%	40,000	140,000
Total Direct Costs	500,000	100%	200,000	700,000
INDIRECT COSTS				
Mob/Demob	50,000			
Construction Management	50,000			
Engineering	100,000			
Total Indirect Costs	200,000			
Total Project Cost	700,000			700,000
CALCULATIONS (Tendered Asset 1)				
% of Total Direct Costs	$\$250,000 / \$500,000 = 50\%$			
Allocation of Indirect Costs	$\$200,000 \times 50\% = \$100,000$			

TANGIBLE CAPITAL ASSET CODE

The Tangible Capital Asset (TCA) Code is the unique number assigned to all asset classes and categories by the RMWB.

ASSET CATEGORY

An Asset Category is the major asset classification for tangible capital assets. The major asset categories for the purpose of this Asset Catalogue include: Water System, Sanitary System, Storm System, Streets and Street Furniture, Bridges, Playgrounds and Green Spaces, Buildings and Facilities, and Miscellaneous.

ASSET CLASS

An Asset Class is a sub-category of a specific Asset Category. For the purpose of this Asset Catalogue, the Asset Classes generally represent assets with similar characteristics, composition and estimated useful lives. Each asset class will have a specific corresponding TCA Code. Each asset class is defined in Section 5.

ASSET IDENTIFICATION

All assets are to be uniquely identified within each individual project. The asset identification included in the TCA Catalogue is to match exactly to the asset identifiers included within the record drawings. Refer to the RMWB Engineering Department Drafting Standards for details on how to use blocks to uniquely identify nodal-type data.

The Municipality will re-assign asset identifiers (Asset ID's) when the data is brought into our GIS Database that adheres to our asset naming convention standards.

NODES AND SEGMENTS

Segments of linear assets are recorded individually. Roads, sidewalks, and curb / gutter are recorded as sections measured from block-to-block. Arterial roads separated by median are recorded as two separate sections, one for each direction of traffic.

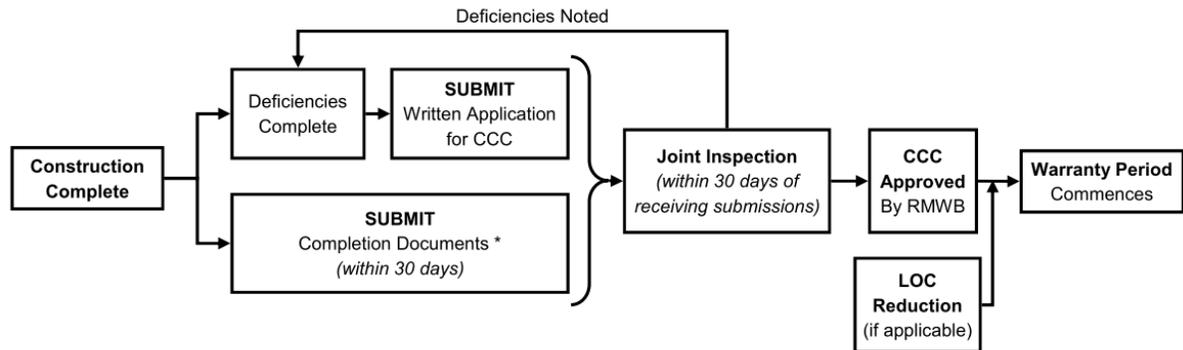
For underground utilities, pipe segments are separated by Nodes such as pipe fittings, valves and hydrants (for water mains), and manholes (for storm and sanitary networks).

<u>Linear Asset</u>	<u>Segment</u>	<u>Measured From (Node)</u>
Roadway System	Section of roadway	Intersection to Intersection
Water System	Pipe	Node to Node
Sanitary System	Pipe	Node to Node
Storm System	Pipe	Node to Node

Other assets, including street furniture, facilities, bridge structures and park furniture and features, are recorded as single entities, broken down to the most appropriate level within the TCA hierarchy for accurate financial reporting.

4 CONSTRUCTION COMPLETION CERTIFICATE PROCESS

Figure 2.4—Construction Completion Certificate Process



Within thirty (30) days of satisfactory completion of surface improvements and as a condition of the issuance of Construction Completion Certificate for surface improvements, the Developer shall submit to the Engineering Department the following information:

- Certification by the Consulting Engineer that all work has been completed in accordance with the plans and specifications, the Engineering Servicing Standards and that all work and deficiencies have been completed
- Set of record drawings as per the Engineering Drafting Standards
- Set of record drawings of franchised utilities and street furniture
- Reporting requirements for Tangible Capital Assets
- All previous certificates that were not submitted concerning materials inspection and testing, mix designs, deflection test, concrete strength tests, compaction tests, infiltration, exfiltration, light, video-inspection tests, as required by the Engineering Standards and the Municipality
- Operation and maintenance manuals, spare parts, and lubricants
- Completed tender document as tendered by the successful contractor and a copy of the Final Progress Payment Certificate.

Upon acceptance of this data, the Developer may request a construction completion inspection and within thirty (30) days of such request, the Municipality will carry out an inspection for issuance of the Construction Completion Certificate. Should seasonal conditions not permit the inspection and execution of the Construction Completion Certificate by the Municipality, the process will be delayed until appropriate conditions exist and/or conditional acceptance may be granted based on the Consulting Engineer's Certification.

5 ASSET CLASS DEFINITIONS

ASSET CATEGORY – STORM SYSTEM

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E040201	Pipe	Most sub-surface storm water is conveyed through a system of pipes. The horizontal length expresses the length of the pipe segment as if it were not sloped. Horizontal length is measured in meters. The total installed cost includes material, supply & labor, pipe jointing, installation, trenching, bedding, backfilling, compaction, connection to existing stubs, testing, and inspection.
E040201	Liner	A reinforcing insert that covers the entire inside surface area of the pipe and is used for pipe rehabilitation. (Includes material, supply & labor, installation, inspection, and testing)
E040202	Manhole/CB Manhole	A vertical structure connecting the ground level to an underground sewer, permitting access for inspection and maintenance. Manholes also provide venting to the sewer system and maintain even hydraulic flow between facilities. The total installed cost includes material, supply & labor, precast concrete structures, tee risers, grating, frames, covers, installation, connections to existing pipe, excavation, bedding, backfilling, inspection, and testing.
E0401	Catch Basin	A vertical structure that conveys storm water from streets to the sewer system. It also collects sand, grit and other material in the sump, preventing it from entering the drainage system. Catch basin manholes have a gated cover. Catch basins are too narrow for human access. The total installed cost includes material, supply & labor, precast concrete structures, grating, frames, covers, installation, connections to existing pipe, excavation, bedding, backfilling, inspection, and testing.
E0401	Catch Basin Lead	Any size pipe that connects a catch basin to a manhole and/or any lateral or trunk pipe segment.
E040203	Service Connection	A segment of pipe that connects residential / commercial customers to the storm system. The total installed cost includes riser, service, material & supply, pipe jointing, installation, trenching, bedding, backfilling, compaction, testing, and inspection.
E0406	Storm Ponds	A storm pond is an above-ground storm water retention facility. Storm ponds types include dry ponds, wet ponds, and constructed wetlands. The total installed cost includes excavation, bedding, compaction, rip rap, and landscaping.

CA CODE	ASSET CLASS	ASSET CLASS DEFINITION
Eo40601	Inlet/Outlet	Drainage facilities through which storm water enters or exits storm ponds. It is the structure that is connected to the inlet or outlet pipe. The total installed cost Includes material & supply, flared ends, gates, rip-rap, and installation. The pipe and control structure are not included as part of the inlet or outlet.
Eo103	Culvert <1.5m	Facility that conveys overland storm discharge to and from ditches, under roads, foot paths, driveways etc. This category includes all culverts less than 1.5 meters in diameter. Culverts with a diameter in excess of 1.5 meters are considered bridge-sized culverts and should be included in the Bridges and Culverts worksheet of the asset catalogue.
Eo407	Treatment Facility	A facility designed to treat pollution contained in storm water from being discharged into receiving waters. An example would be a "Storm Sceptor" or grit/oil separator.
Eo404	Outfall	A drainage facility that conveys storm water into natural receiving water bodies (creeks, rivers and natural lakes). The total installed cost includes material, supply & labor, flared ends gates, rip-rap, and installation. (pipe and control structure are not included)
Ll130	Swale	A shallow sloped channel for the conveyance of storm water made of concrete. (Includes material, supply and labor, evacuation, laying of swale material, and removal of old materials)
Eo405	Pump/Lift/Transfer Station	Building – structure housing the pump station Equipment – all mechanical/electrical/process control equipment within the pump station Structure - structures other than buildings within a pump station asset (All pump station sub-areas should include labor, materials & supply, transportation, special machine services, shop service, interdepartmental services, protection services, safety services, privileges and permits, rents, engineering services & supervision, insurance, legal costs, taxes, interest during construction, and all applicable internal overheads)

ASSET CATEGORY – SANITARY SYSTEM

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E030101	Pipe	Most sub-surface Sewer distribution is conveyed through a system of pipes. The horizontal length expresses the length of the pipe segment. Horizontal length is measured in meters. (Includes material, supply & Labor, pipe jointing, installation, trenching, bedding, backfilling, compaction, connection to existing stubs, testing, and inspection)
E030101	Forcemain	A pipe that conveys wastewater under pressure as a result of mechanical aid (pump stations) to a point of discharge at atmospheric pressure (gravity flowing pipe segment, manhole, etc.). (Includes material & supply, installation, fittings, trenching, bedding, backfilling, compaction, connection to existing stubs, testing, and inspection)
E030101	Liner	A reinforcing insert that covers the entire inside surface area of the pipe and is used for pipe rehabilitation. (Includes material and supply, installation, inspection, and testing)
E030101	Siphon	Siphon is a continuous tube that allows liquid to drain from a reservoir through an intermediate point that is higher, or lower than the reservoir. The flow being driven only by the difference in hydrostatic pressure without need for pumps. (Includes material, labor and installation charges.
E030102	Manhole	A vertical structure connecting the ground level to an underground sewer, permitting access for inspection and maintenance. Manholes also provide venting to the sewer system and maintain even hydraulic flow between facilities. (includes material, supply and labor, precast concrete structures, tee risers, grating, frames, covers, installation, connections to existing pipe, excavation, bedding, backfilling, inspection, and testing)
E030103	Service Connection	A segment of pipe that connects residential and commercial customers to the sewer and storm system. (Includes riser, service, material & supply, pipe jointing, installation, trenching, bedding, backfilling, compaction, testing, and inspection)
E0302010301	Storage Tank	An underground wastewater retention facility. This does not include any pipe or online storage. (Includes material & supply, installation, fittings, trenching, bedding, backfilling, compaction, connection to existing stubs, testing, and inspection)
E030201	Sewage Lagoon	A shallow artificial pond for the stabilization of sewage. (Includes material, supply and labor)

E030202	Pump/Lift Station	<p>Building – structure housing the pump station</p> <p>Equipment – all mechanical/electrical/process control equipment within the pump station</p> <p>Structure - structures other than buildings within a pump station asset such as dry or wet wells or distribution chambers</p> <p>(All pump station sub-areas should include labor, materials & supply, transportation, special machine services, shop service, interdepartmental services, protection services, safety services, privileges and permits, rents, engineering services & supervision, insurance, legal costs, taxes, interest during construction, and all applicable internal overheads)</p>
E030203	Treatment Plant	<p><u>Components:</u></p> <p>Building Structure – all load bearing elements of the building above or below the ground floor slab including but not limited to walls, beams, stairs, floors, and foundations</p> <p>Roof – The covering of the uppermost part of a building that protects the building and its contents from the effects of weather</p> <p>Architectural – All non-load bearing elements of the building above or below the ground floor slab including but not limited to walls, partitions, windows, doors, stairs, finishes, and fittings</p> <p>Conveyance – Elevator, lift, escalator, and moving walk systems including controls</p> <p>Electrical – All the wiring, lighting fixtures, electrical conduit, cables, circuits, switches, and controls within the perimeter of the building that provide power for all electrical appliances and lighting instruments</p> <p>Mechanical – Consists of all the plumbing, heating, cooling, and ventilation systems. System elements include all piping, drains, fixtures, and associated equipment within the perimeter of the building used for moving domestic water, other fluid gases, compressed air, sewage, as well as chillers, condensers, exhaust fans and coil units, heating strips, chilled/heating water supply and return piping, air ducts, registers, climate control panels, and all circuitry connected to the power supply pane.</p> <p>Process Control – all process control instrumentation within the facility</p> <p>Structures – such as clarifiers, digesters, tanks</p> <p>(All facility sub-areas should include labor, materials & supply, transportation, special machine services, shop service, interdepartmental services, protection services, safety services, privileges and permits, rents, engineering services & supervision, insurance, legal costs, taxes, interest during construction, and all applicable internal overheads)</p>

ASSET CATEGORY – WATER SYSTEM

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E020101	Pipe	Water distribution is conveyed through a system of pipes. The horizontal length expresses the length of the pipe segment. Horizontal length is measured in meters. (includes material, supply & labor, pipe jointing, installation, trenching, bedding, backfilling, compaction, connection to existing stubs, testing, and inspection)
E020101	Liner	A reinforcing insert that covers the entire inside surface area of the pipe and is used for pipe rehabilitation. (Includes material, supply and labor, installation, inspection, and testing)
E020102	Service Connection	A segment of pipe that connects residential and commercial customers to the water lines. (Includes riser, service, material & supply, pipe jointing, installation, trenching, bedding, backfilling, compaction, testing, and inspection)
E020103	Chamber	This is a type of manhole which contains valves, blow-off, meters, or other appurtenances.
E020104	Valves	Nodes in the water distribution network that controls water flow. They include air release, pressure reducing, gate, butterfly, service, hydrant, and check valves. (includes material, supply and labor)
E020104	Fittings	Nodes in the water distribution network that controls water flow. Examples include bend, anode, wye, tee, saddle, reducer, cross, coupling, plug, expansion joint. (includes material, supply and labor)
E0202	Hydrants	Used in Fire management (Cost includes hydrants, connection and installation)
E020301	Pump/Lift/Booster Station	<p>Building – structure housing the pump station</p> <p>Equipment – all mechanical/electrical/process control equipment within the pump station</p> <p>Structure - structures other than buildings within a pump station asset</p> <p>(All pump station sub-areas should include labor, materials & supply, transportation, special machine services, shop service, interdepartmental services, protection services, safety services, privileges and permits, rents, engineering services & supervision, insurance, legal costs, taxes, interest during construction, and all applicable internal overheads)</p>

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E0203020301	Storage Tank / Reservoir	An underground water retention facility. This does not include any pipe or online storage. (Includes material, supply and labor, installation, fittings, trenching, bedding, backfilling, compaction, connection to existing stubs, testing, and inspection)
E020302	Treatment Plant	<p><u>Components:</u></p> <p>Structure – all load bearing elements of the building above or below the ground floor slab including but not limited to walls, beams, stairs, floors, and foundations</p> <p>Roof – The covering of the uppermost part of a building that protects the building and its contents from the effects of weather</p> <p>Architectural – All non-load bearing elements of the building above or below the ground floor slab including but not limited to walls, partitions, windows, doors, stairs, finishes, and fittings</p> <p>Conveyance – Elevator, lift, escalator, and moving walk systems including controls</p> <p>Electrical – All the wiring, lighting fixtures, electrical conduit, cables, circuits, switches, and controls within the perimeter of the building that provide power for all electrical appliances and lighting instruments</p> <p>Mechanical – Consists of all the plumbing, heating, cooling, and ventilation systems. System elements include all piping, drains, fixtures, and associated equipment within the perimeter of the building used for moving domestic water, other fluid gases, compressed air, sewage, as well as chillers, condensers, exhaust fans and coil units, heating strips, chilled/heating water supply and return piping, air ducts, registers, climate control panels, and all circuitry connected to the power supply pane.</p> <p>Process Control – all process control instrumentation within the facility</p> <p>(All facility sub-areas should include labor, materials & supply, transportation, special machine services, shop service, interdepartmental services, protection services, safety services, privileges and permits, rents, engineering services & supervision, insurance, legal costs, taxes, interest during construction, and all applicable internal overheads)</p>

ASSET CATEGORY – STREETS AND STREET FURNITURE

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
Eo111	Road Sub-structure	The main load bearing/load spreading layer in the road structure. The thickness depends on the loading of the traffic for which the road is designed. This category includes grading (excavation, embankment construction), sub-grade preparation, gravel/asphalt sub base, removal of existing base components Gravel roads will be recorded as sub-structure
Eo111	Road Surface	The top wearing layer of the road that comes in contact with traffic. This category includes surface course, grinding as required, paint lines
Ll01	Access Road	An access road is not a road defined as a roadway system for public transportation. These are categorized based on their surface – usually gravel or asphalt.
Ll01	Land Under Roads – Developed Roads	Land used for transportation right-of-ways, and is the area of land identified in the road plan for the constructed road. This may include a road allowance and additional land acquired for the purpose of constructing the road. Undeveloped road allowance is a surveyed road allowance on which a road has not been built.
Ll02	Land Under Roads – Undeveloped Road Allowance	
Eo1120101	Sidewalk - Monolithic	Sidewalks are beside a street/road or on a public right of way. The width of a monolithic sidewalk includes the width of the curb and gutter. Sidewalks to access property are not recoded in this category but are categorized under Land Improvements. Includes supply and install sidewalks (asphalt/concrete), gravel base, supply and install walk crossings, access walkway including 1.5m separate walk etc.
Eo1110202	Sidewalk – Separate	
Ll27	Sidewalk/Walkway	This type of walkway is on municipal property and is used to access a property or is around the perimeter of a municipal facility/building/park (apron). It does not include sidewalks that run beside public streets.
Eo113	Median	Concrete structure that is used as a barrier between divide highways, it can also be used to calm traffic or a turning lane (Cost includes material, supply and labor)
Eo101	Barrier	Concrete structure to restrict movement of traffic (Material Cost)

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E0104	Curb & Gutter - Rolled	Concrete structure that is constructed on the edge of pavement designed to aid water drainage and to prevent traffic from entering sidewalks (Cost includes material, supply and labor)
E0104	Curb & Gutter – Straight Faced	
L133	Curb & Gutter (on Municipal Property)	All curb and gutter on roads to access property. It does not include curb and gutter on public streets.
E0105	Guard rails	Metal rails that are placed horizontal to protect traffic from embankment and obstructions (Cost includes material, posting, spikes and installation)
E010601	Lights – Decorative	Lights used to illuminate streets but are not the standard street light – does not include lighting used in parks or parking lots.
E010602	Lights – Street	To illuminate the street cost includes material (poles, light, wiring) and installation
E010603	Traffic Signals	Traffic signals used to direct traffic at intersections and problematic areas. Cost includes material (Poles, lights, wiring, cabinets, traffic loops & Camera) and installation
E010603	Warning Signals	An automated traffic warning signal usually placed before intersection traffic signals to give advance warning of signal change; automated pedestrian crosswalk warning signals, automated fire hall advisory lights
E0107	Overpass/Interchange	
E0108	Parkades	Structures that are designed to accommodate parking of vehicles (include material, supply and labor)
E0110	Road signs – Street Names	A sign with street names posted (Cost include material of sign, pole, fittings and installation)
E011001	Road signs – Information	Sign that relays information (Cost include material of sign, pole, fitting & installation)
E011002	Road signs - Traffic control	Sign used to direct or inform people of traffic issues i.e. (Stop signs, bus signs, one way) cost includes material, supply and installation
L123	Retaining Walls	A vertical wall that holds back earth. Used for embankment, to separate roads, sidewalks and buildings, to keep river banks from eroding etc.
L131	Sound Walls	Sound Walls help lessen the noise impacts of the roadway improvement and provides noticeable sound reduction for houses closest to the roadway.
L13201	Wooden Walks and Stairs	This includes all stairs as a land improvement that is not part of or attached to a building.

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
L1601	Landscaping - Berm	
L1602	Landscaping – Concrete Pad	

ASSET CATEGORY – MISCELLANEOUS

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E011401	Duct Bank	Duct banks are groups of conduits designed to protect and consolidate cabling to and from buildings. In a duct bank, data and electrical cables are laid out within PVC conduits that are bundled together; these groupings of conduit are protected by concrete and metal casings. Duct banks are often buried, allowing contractors to consolidate the wiring for a building into centralized underground paths.
E011401	Conduit	A tube used for enclosing electrical or other data cables (communication links).
E011402	Vault	Underground vaults are nodes in the linear duct bank/conduit system that facilitate maintenance and repair (if necessary) of the communication links. Once the cement vault is poured and cured and backfilling completed, all that will be seen is a metal manhole cover.
L108	Communication Tower	A tall structure designed to support antennas for telecommunications and broadcasting. They can be self-supporting or supported by stays or guys.
Mo801	Communication Links	In telecommunications, a link is the communications channel that connects two or more communicating devices (nodes) for the purpose of transmitting and receiving data. An example would be fibre optic cable.
Mo802	SCADA System	Supervisory Control and Data Acquisition – generally refers to industrial control systems: computer systems that monitor and control industrial or infrastructure or facility-based processes such as water treatment and distribution and wastewater collection and treatment from remote locations
OPEX	Biological Assets	Includes living plants such as trees, shrubs, flowers, grass, seed, and sod

ASSET CATEGORY – BRIDGES

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
E0102	Bridge Superstructure	<p>Bridge is a raised structure built to carry vehicles or pedestrians over an obstacle. Superstructure is the portion of the bridge structure including Deck, Girders, Trusses, Parapet, Expansion Joints and Bearings which carries the traffic load and transfers that load to the sub structure. Deck is the top surface of the bridge which carries the traffic. Parapet is a low wall along the outside edge of a bridge deck used to protect pedestrians and vehicles. Bearings are placed between the end of the girders and the top of the substructure elements. (Piers and abutments) to transfer the loads from the superstructure to the substructure. Girders are structural elements (concrete or steel) that support the deck and transfer the live load (e.g. traffic loads) to the substructure through the bearings. A truss is part of the superstructure which has members that are bolted or welded together to form a frame. A truss performs a similar function as a girder in that it transfers the live loads and the dead loads (vertical loads that are stationary) from the deck to the substructure</p> <p>Lighting - Under Bridge and Over Bridge</p>
E0102	Bridge Substructure	<p>Substructure is The portion of the bridge structure including Abutment, Piers, and Foundation etc. Which supports the superstructure</p> <p>A Wingwall is part of the abutment and performs the function of containing the fill of the approach.</p> <p>Abutment is part of structure which supports the end of a span (girders/trusses), transfers the load to the foundation, and retains the approach embankment.</p> <p>Piers perform a similar function as the abutments except (typically) they do not retain an embankment. Piers are located at the end of a span(s) between abutments A foundation is an element of the substructure which rests directly to the soil bedrock.</p>
E0102	Bridge Asphalt Overlay	<p>This is the wearing surface of the bridge deck which improves the driving surface of the bridge</p>
E0103	Culvert >1.5m	<p>Facility that conveys overland storm discharge to and from ditches, under roads, foot paths, driveways etc. This category includes all culverts greater than 1.5 meters in diameter.</p> <p>Culverts with a diameter less than 1.5 meters in diameter should be included in the Storm Lines worksheet of the asset catalogue.</p>

ASSET CATEGORY – PLAYGROUNDS AND GREEN SPACES

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
Ll0101	Access Road – Asphalt	Includes cost of material, supply and labor for constructing asphalt roads
Ll0102	Access Road - Gravel	Includes cost of material, supply and labor for constructing gravel roads
Ll03	Pathway/Trail	May be bike/jogging paths, walkways, and trails. Includes cost of material, supply and labor.
Ll27	Sidewalk/Walkway	This type of walkway is on municipal property and is used to access a property or is around the perimeter of a municipal facility/building/park. It does not include sidewalks that run beside streets or roads.
Ll21	Playgrounds	Includes playgrounds such as skateboard parks. (total construction cost)
Ll2104	Playground Structures/Equipment	Swings, Slides, See-Saw, Gym etc.
Ll28	Sports Fields	Includes baseball, cricket, football, hockey, soccer pitch, and tennis courts. Includes grass surface fields, shale surface fields, and other structures (goal posts/backstops, etc.)
Ll1901	Park Accessories	Includes benches, stoves and fire pits, picnic shelters and monuments/statues
Ll10	Fountains	Includes drinking fountains, and decorative fountains
Ll13	Irrigation Systems	Includes irrigation systems construction cost (material, labor and supply)
Ll09	Fence	Includes cost of material, supply and labor
Ll11	Gate	Included cost of material, supply and labor
Ll17	Lighting	This category includes all lighting that is not intended to illuminate streets. It includes lighting in parking lots, arenas, playgrounds, and parks and its main purpose is security. Includes cost of installation, material and supply

ASSET CATEGORY – BUILDINGS AND FACILITIES

TCA CODE	ASSET CLASS	ASSET CLASS DEFINITION
Bo1	Leasehold Improvements	Improvements such as alterations, remodeling, or renovations performed on a leased property
B	Non-permanent building	Includes temporary or portable building structures
Bo201 (Concrete) Bo202 (Frame) Bo203 (Metal)	Building	<p><u>Components:</u></p> <p>Structure – all load bearing elements of the building above or below the ground floor slab including but not limited to walls, beams, stairs, floors, and foundations</p> <p>Roof – The covering of the uppermost part of a building that protects the building and its contents from the effects of weather</p> <p>Architectural – All non-load bearing elements of the building above or below the ground floor slab including but not limited to walls, partitions, windows, doors, stairs, finishes, and fittings</p> <p>Conveyance – Elevator, lift, escalator, and moving walk systems including controls</p> <p>Electrical – All the wiring, lighting fixtures, electrical conduit, cables, circuits, switches, and controls within the perimeter of the building that provide power for all electrical appliances and lighting instruments</p> <p>Mechanical – Consists of all the plumbing, heating, cooling, and ventilation systems. System elements include all piping, drains, fixtures, and associated equipment within the perimeter of the building used for moving domestic water, other fluid gases, compressed air, sewage, as well as chillers, condensers, exhaust fans and coil units, heating strips, chilled/heating water supply and return piping, air ducts, registers, climate control panels, and all circuitry connected to the power supply pane.</p> <p>Process Control – all process control instrumentation within the facility</p> <p>(All facility sub-areas should include labor, materials & supply, transportation, special machine services, shop service, interdepartmental services, protection services, safety services, privileges and permits, rents, engineering services & supervision, insurance, legal costs, taxes, interest during construction, and all applicable internal overheads)</p>
M14	Fluid Storage Unit	Includes water or fuel storage tanks above or below ground
Various	All other asset classes	The Buildings and Facilities category in the asset catalogue includes many types of equipment commonly found in a building that must be itemized separately such as HVAC systems, sound systems, data/communication systems, laboratory equipment

6 ASSET CATALOGUE TEMPLATE

USING THE ASSET CATALOGUE

The RMWB Drafting Standards describe how the engineering drawings of underground utilities are to be prepared, and it is important that these standards be strictly adhered to for the final drawing submission. In particular, the pre-defined Blocks must be used, with the names of manholes, fittings and valves properly attributed. As part of the final submission, both the CAD (.dwg) files meeting the Drafting Standards and the completed Asset Catalogue (AC) are to be provided to the RMWB.

The Asset Catalogue will be used to identify each individual asset that will be populated into the Municipality's GIS database of infrastructure assets, and in an Asset Register to meet the TCA reporting requirements. Each row in the worksheet will represent a specific asset (i.e. pipe, manhole, water fitting), and all of its attributes. This user guide explains how to complete the AC correctly.

Step 0: Select "Enable Content" to enable the macros within the asset catalogue.

Step 1: The Main Menu of the AC (Figure 1 below) will appear automatically once you open the AC even if you save on a different screen.

Fill in the applicable information in the format displayed below, which will automatically carry across the other workbooks.

1. Select Project Type: DA for Development Agreement or CP for Capital Project.
2. Enter the Development Agreement number.
3. Enter the Project Name like: **Stone Creek**
4. Enter the Phase Name/Number like: **Stage 1**
5. Enter the Developer Name like: **XYZ Developments**
6. Enter the Consultant Name like: **XYZ Engineering Ltd.**
7. Subdivision number would be entered like: **2008-WB-US-006**
8. Enter the CCC and FAC dates as applicable
9. Enter the date the asset was 'in service'.

Figure 1



REGIONAL MUNICIPALITY
OF WOOD BUFFALO

Project Type DA CP

TCA ASSET CATALOGUE REPORTING SYSTEM

Development Agreement # _____
Project Name: _____
Project # _____
Phase Name/# _____
Developer Name: _____
Consultant Name: _____
Contractor Name: _____
CCC Date and/or FAC Date _____
In-Service Date _____

ALLOCATED INDIRECT COSTS

WATER SYSTEM

STORM SYSTEM

SANITARY SYSTEM

STREETS

BRIDGES

PLAYGROUNDS / GREEN SPACES

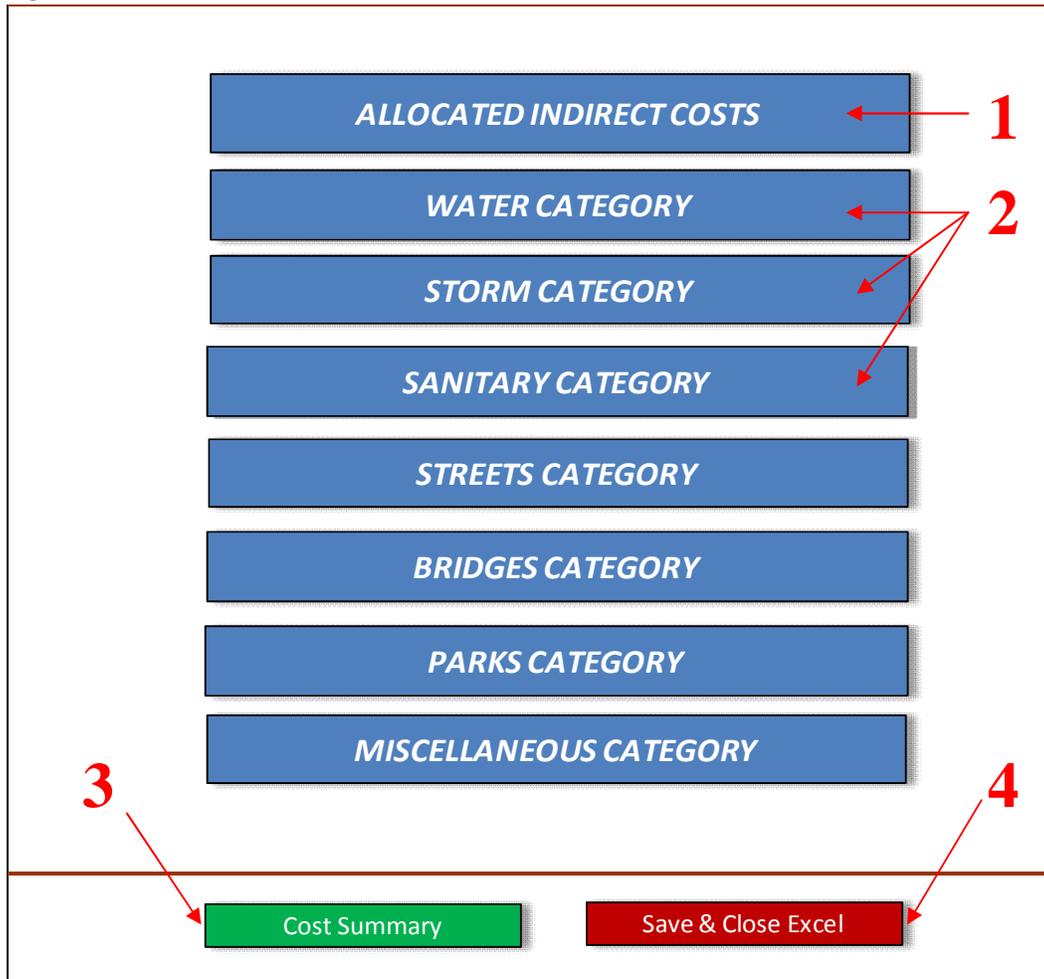
BUILDINGS AND FACILITIES

MISCELLANEOUS

Cost Summary **Save & Close Excel**

Step 2: The AC uses menus to navigate throughout the template.

Figure 2



1. Click to go to Allocated Indirect Costs screen. This should be completed prior to entering assets by category.
2. Click to select the Asset Category screen you want.
3. Click to go to Total Asset Cost Summary by Category screen.
4. Click "Save & Close Excel" to save your entries and exit the AC

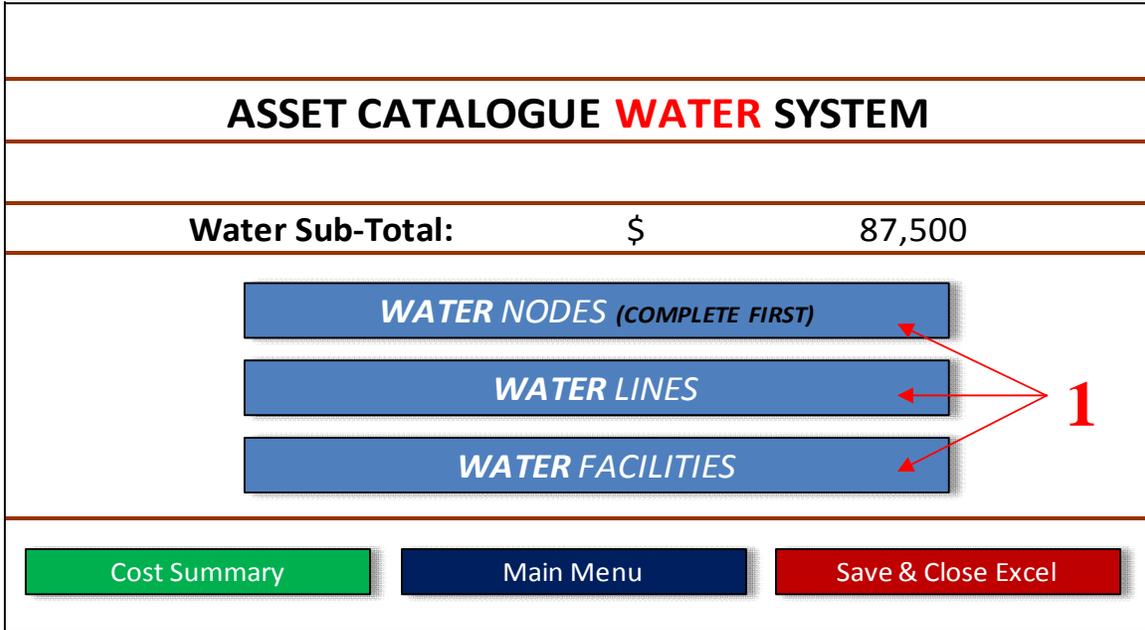
Step 3: Indirect costs should be recorded on this screen prior to entering any assets. This will ensure that these costs are allocated on a pro-rata basis to all the assets contributed or constructed.

Figure 3

MAIN MENU INSERT RECORD UNDO LAST INSERT		
<i>ALLOCATED INDIRECT COSTS</i>		
Allocated Costs Total: \$ 692,500		
<i>INDIRECT COST CATEGORY</i>	<i>ADDITIONAL DESCRIPTION OF EXPENSE</i>	<i>TOTAL INDIRECT COST (\$)</i>
Construction Management		350,000.00
Site Management		100,000.00
Mobilization and Demobilization		75,000.00
Engineering	Pre-design and design costs	167,500.00

Step 4: Upon selecting the 'Water Category' you will be presented with the screen below.

Figure 3



ASSET CATALOGUE WATER SYSTEM

Water Sub-Total: \$ 87,500

WATER NODES (COMPLETE FIRST)

WATER LINES

WATER FACILITIES

Cost Summary **Main Menu** **Save & Close Excel**

1. The Nodes component for all asset categories must always be completed prior to the Lines component. The asset ID you assign to a node (i.e. hydrant – **H1**; or valve **WV25**) becomes the asset ID for the line (section of pipe). A section of water pipe with a hydrant on one end and a valve on the other will be assigned the asset ID **H1-WV25**.

EXPLANATION OF WATER CATEGORY SCREENS

Water Nodes Screen

The underground utilities for water, storm, and sanitary systems consist of a network of nodes, links, and facilities. These assets are recorded on separate worksheets. The Nodes screen must always be completed before the link (water/sewer/storm lines) screens, so that the Node asset IDs are available in the drop down menus on the link screens. Fields with a grey background are automatically populated when you select an option or contain formulas and you should not enter text or values in them.

Figure 4

UNIQUE ID	ASSET CLASS	FITTING_TYPE	SIZE (mm)	PRESSURE CLASS	DEPTH OF COVER (M)	INSTALL COST (\$)	ALLOCATED INDIRECT COST (\$)	TOTAL ASSET COST (\$)	STATUS	
H	3	Hydrant	N/A	200	100 psi	3.5	15,000	18,396	33,396	Removed and replaced
WF	2	Bend	45 Bend	200	100 psi	3.5	1,875	2,299	4,174	New
WV	1	Valve	Pressure Reducing Valve	200	100 psi	3.5	3,500	4,292	7,792	New

1. Main Menu – Shortcut to main menu of AC

Cells with a grey background contain formulas or automatically populate

- 2. Insert Record** – Insert a new record (row) to enter another asset class
- 3. Undo Last Insert** – Delete the last record (row) you inserted
- 4. Water Menu** – Takes you to the main Water Category screen (Figure 3)
- 5. Unique ID** – When you select an asset category from the drop down menu (**9**), an Asset ID prefix is automatically populated. Both sections of the Asset ID must also be identified in the name attribute of the block describing the node in the CAD (.dwg) file.
- 6. Unique ID** – The second half of the asset ID (**8**) should be a unique sequential numerical identifier. Both sections of the Asset ID must also be identified in the name attribute of the block describing the node in the CAD (.dwg) file.
- 7. Asset Class** - Is a drop-down menu of all available water node asset classes. Insert a new record (**2**) for each water node asset.
- 8.** Select a fitting or valve type from the drop down list for each water node asset unless it indicates N/A
- 9.** Enter the size if applicable for each asset class record
- 10.** Enter the specific attributes for each asset class record
- 11. Install Cost (\$)** – Enter the direct cost of each asset class record
- 12. Allocated Indirect Cost (\$)** – This field will calculate the pro-rata portion of indirect costs (**Step 3** above) applicable to each asset record. **Total Asset Cost (\$)** – This will total the install cost plus the allocated indirect cost and update the Total Asset Cost Summary screen (Figure 7).
- 13. Status** – Select from drop down menu the status of the asset record from options New, Abandoned, Removed, Removed and Replaced, or Private (non-Municipal owned). It is important to identify assets replaced, removed, or abandoned so they can be property identified in the financial and operational records of the Municipality.

Water Line Screen

Figure 5

MAIN MENU
INSERT RECORD
UNDO LAST INSERT
WATER MENU

WATER LINE SCREEN

UNIQUE ID	ASSET CLASS	FROM NODE	TO NODE	SIZE (mm)	MATERIAL	PIPE CLASS	DEPTH OF COVER (m)	LENGTH (m)	UNIT COST (\$/m)	INSTALL COST (\$)	ALLOCATED INDIRECT COST (\$)	TOTAL ASSET COST (\$)	STATUS
WF2-H3	Water Main	WF2	H3	200	PVC		3.5	20.00	40.00	800	847	1,647	Removed and replaced
WV1-WF2	Water Main	WV1	WF2	200	PVC		3.5	60.00	40.00	2,400	2,542	4,942	New

14
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- 14. Unique ID** – The unique ID for each water line class is automatically assigned after completing the From Node and To Node columns. In the example above, a water main is identified from node WV1 to node WF2 (identified on the Water Node screen in Figure 4). Therefore, the unique ID assigned to this water main will be WV1-WF2.
- 15. Asset Class** – Is a drop-down menu of all available linear water asset classes. Insert a new record for each water line asset.
- 16. From Node and To Node** – From this drop down menu, choose which section of water line asset you are recording. Each water link is separately identified between nodes (fittings, valves, etc.) Each node in the drop down menu is one that was created under the Water Node screen.
- 17.** Enter the specific attributes for each asset class record
- 18. Install Cost (\$)** – Enter the direct cost of each asset class record. **Allocated Indirect Cost (\$)** – This field will calculate the pro-rata portion of indirect costs (Step 3 above) applicable to each asset record. **Total Asset Cost (\$)** – This will total the install cost plus the allocated indirect cost and update the Total Asset Cost Summary screen (Figure 7).
- 19. Status** - Select from drop down menu the status of the asset record from options New, Abandoned, Removed, Removed and Replaced, or Private (non-Municipal owned)

Water Facility Screen

Figure 6

WATER FACILITIES SCREEN						
<i>UNIQUE ID</i>	<i>ASSET CLASS</i>	<i>DESCRIPTION</i>	<i>INSTALL COST (\$)</i>	<i>ALLOCATED INDIRECT COST (\$)</i>	<i>TOTAL ASSET COST (\$)</i>	<i>STATUS</i>
TRP8	Treatment Plant - Equipment - Process Control	Wwater treatment process	5,000,000	6,010	5,006,010	New
TRP7	Treatment Plant - Building - Mechanical		450,000	541	450,541	New
TRP6	Treatment Plant - Building - Mechanical	HVAC System	125,000	150	125,150	New
TRP5	Treatment Plant - Equipment - Electrical	Security System	75,000	90	75,090	New
TRP4	Treatment Plant - Building - Electrical		125,000	150	125,150	New
TRP3	Treatment Plant - Building - Roof	Metal	2,500,000	3,005	2,503,005	New
TRP2	Treatment Plant - Building - Architectural		2,500,000	3,005	2,503,005	New
TRP1	Treatment Plant - Building - Structural	#1 Hunter Street	10,000,000	12,020	10,012,020	New

20. Unique ID – Assign a unique identifier to each recorded asset

21. Asset Category – For water facilities, all costs associated with the electrical, process control or mechanical can be entered as a lump sum on one row. However, significant pieces of infrastructure should be identified separately as in the HVAC example above.

All yard piping up to the edge of the structure (e.g. booster station, treatment plant) should be included in the appropriate Node and Line worksheets. Only piping internal to the structures should be included in the Facilities worksheet.

22. Description - Provide as much detail as required to clearly identify each asset

EXPLANATION OF TOTAL ASSET COST SUMMARY SCREEN

This screen summarizes the total costs of all asset categories and classes entered into the AC, and are used by the RMWB to record assets and historical cost values of assets constructed and contributed by others.

Figure 7

<div style="background-color: #003366; color: white; padding: 5px; display: inline-block; margin-bottom: 10px;">MAIN MENU</div>			
TOTAL ASSET COST SUMMARY SCREEN			
	DIRECT COSTS (\$)	INDIRECT COSTS (\$)	TOTAL ASSET COST (\$)
WATER LINES	62,500	25,000	87,500
WATER NODES	-	-	-
WATER FACILITIES	-	-	-
STORM LINES	-	-	-
STORM NODES	-	-	-
STORM FACILITIES	-	-	-
SANITARY LINES	-	-	-
SANITARY NODES	-	-	-
SANITARY FACILITIES	-	-	-
STREETS & SIDEWALKS	-	-	-
STREET FURNITURE	-	-	-
BRIDGES	-	-	-
PLAYGROUNDS/GREEN SPACE	-	-	-
BUILDINGS & FACILITIES	-	-	-
MISCELLANEOUS	-	-	-
Total Asset Valuation	62,500	25,000	87,500

PRINTING HELP

Preview how the worksheet will print

Seeing a preview of your printout will allow you to make final adjustments before you print. In the print preview window, you can see items that aren't visible in the onscreen worksheet, such as margins, headers and footers, and print titles.

Preview pages before you print

View each page exactly as it will print by clicking **Print Preview** on the **File** menu. The buttons at the top of the print preview window give you quick access to the layout and printing options for your worksheet. For example, you can turn gridlines on or off, add page numbers, or change the order in which pages are printed. After you make a change, make sure to preview the worksheet again.

Make the worksheet fit the page width

If the worksheet is too wide to fit on the printed page, try one or more of the following:

Switch to landscape orientation

If the worksheet has many more columns than will fit on a portrait page, you can switch to landscape orientation.

1. Click **Page Setup** on the **File** menu.
2. On the **Page** tab, under **Orientation**, click **Orientation**.



Shrink the worksheet to fit the page

To fit a few more columns on the printed page, you can shrink the worksheet content to fit on a page.

1. Click **Page Setup** on the **File** menu. On the **Page** tab, click **Fit to**, and enter **1** in the **page(s) wide** box