

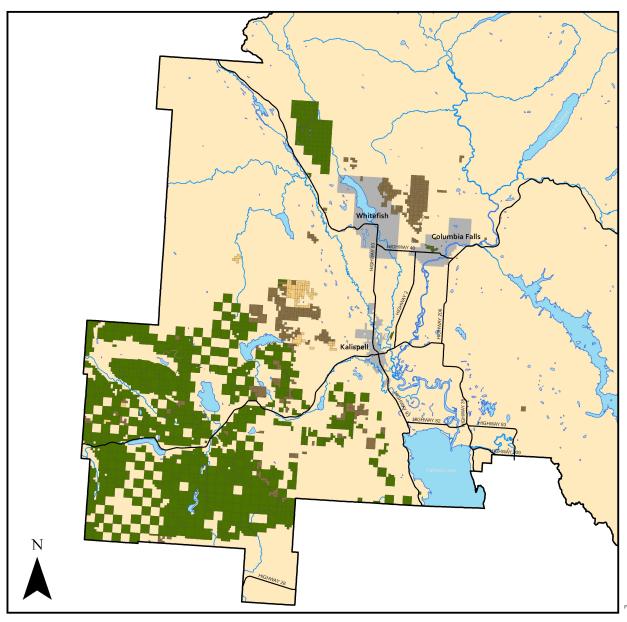
MAP 2.1 FLATHEAD LANDS

FLATHEAD COUNTY GROWTH POLICY





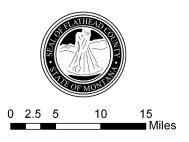
SOURCE: FLATHEAD COUNTY GIS DEPARTMENT
FLE PATH: SVECTY, LONG RANGE PLANNING, GROWTH POLICY, GROWTH POLICY, LIPPATE 10-11, MADDING, CHAPTER 2-1, AND LISE



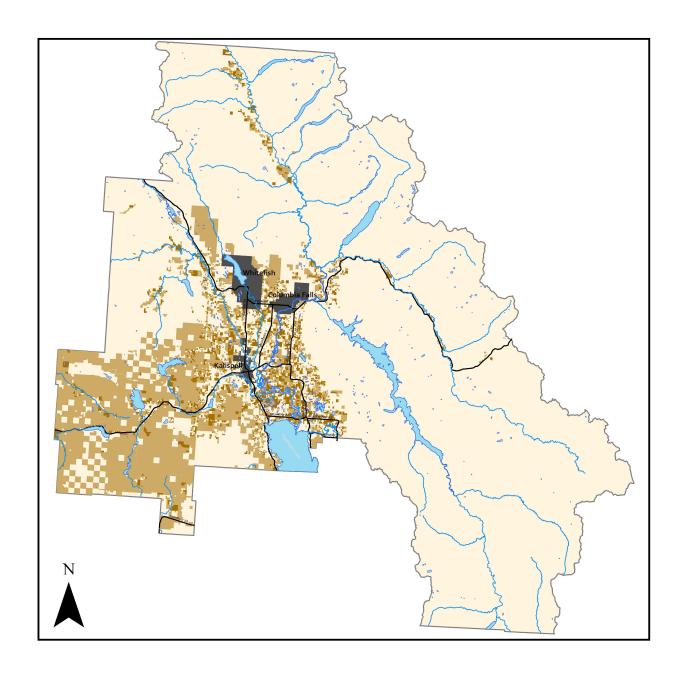
MAP 2.2 CORPORATE TIMBER LANDS

FLATHEAD COUNTY GROWTH POLICY





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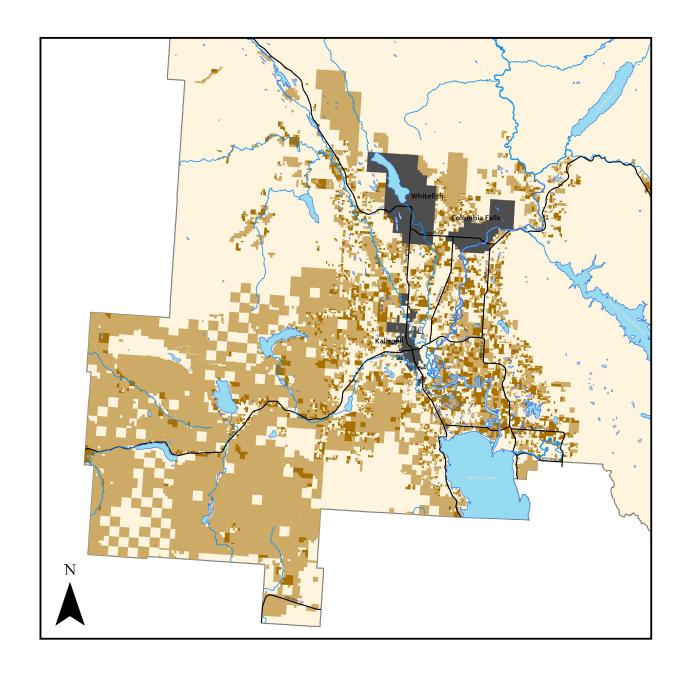


MAP 2.3 AGRICULTURAL LAND USE

FLATHEAD COUNTY GROWTH POLICY



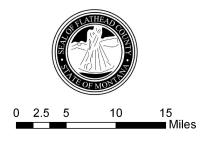


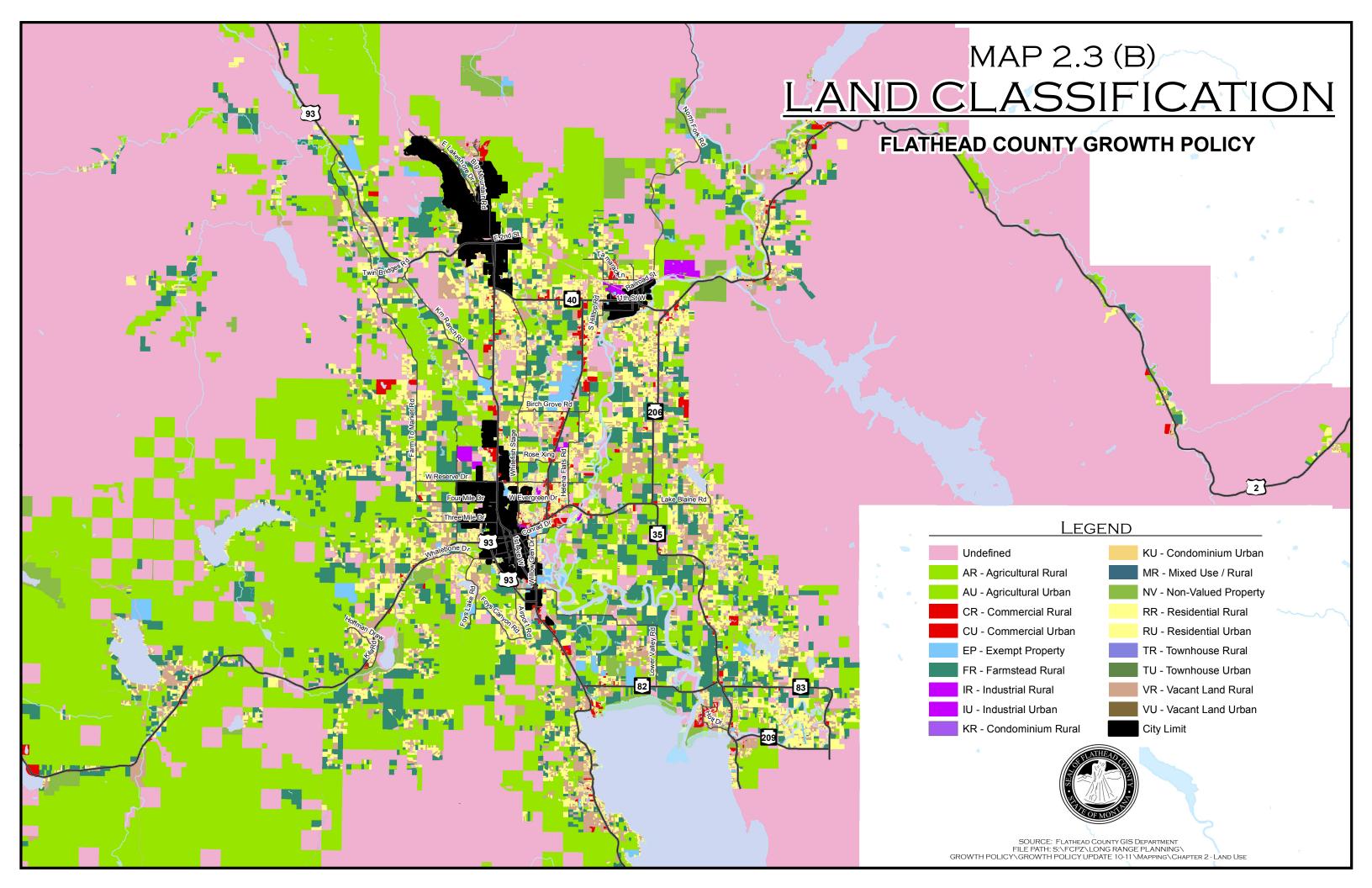


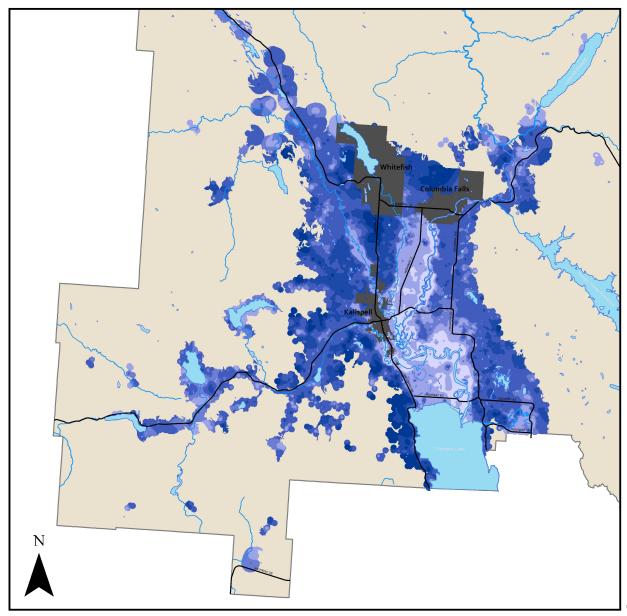
MAP 2.3 (A) AGRICULTURAL LAND USE

FLATHEAD COUNTY GROWTH POLICY





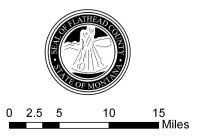




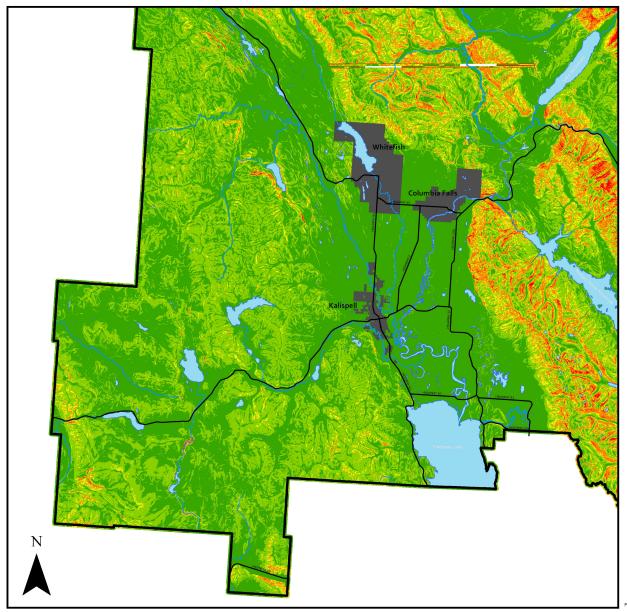
MAP 2.4 GROUNDWATER

FLATHEAD COUNTY GROWTH POLICY





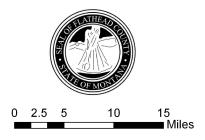
SOURCE: CWI/MONTANA BUREAU OF MINES & GEOLOGY - NRIS DATABASE; COMPILATION/ANALYSIS COMPELTED BY THE FLATHEAD LAKERS FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Chapter 2 - Land Usi



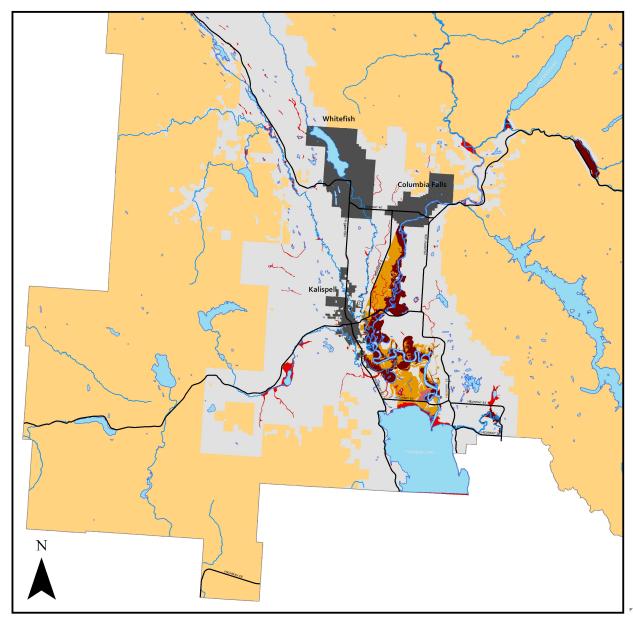
MAP 2.5 STEEP SLOPES

FLATHEAD COUNTY GROWTH POLICY



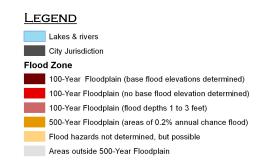


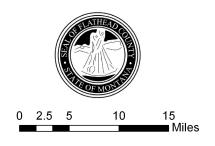
SOURCE: FLATHEAD COUNTY GIS DEPARTMENT
FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Chapter 2-Land Use



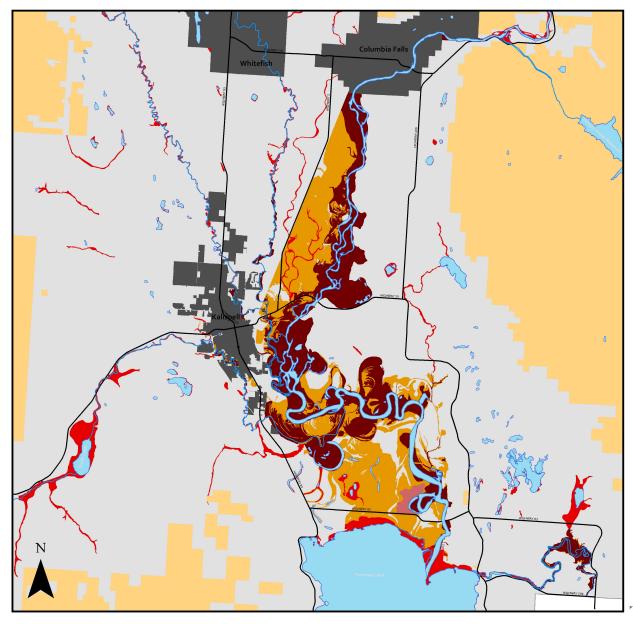
MAP 2.6 FLOODPLAIN

FLATHEAD COUNTY GROWTH POLICY



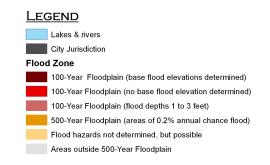


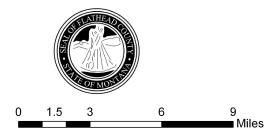
SOURCE: FLATHEAD COUNTY GIS DEPARTMENT: FEMA FLOOD INSURANCE RATE MAPS ILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Chapter 2 - Land Use



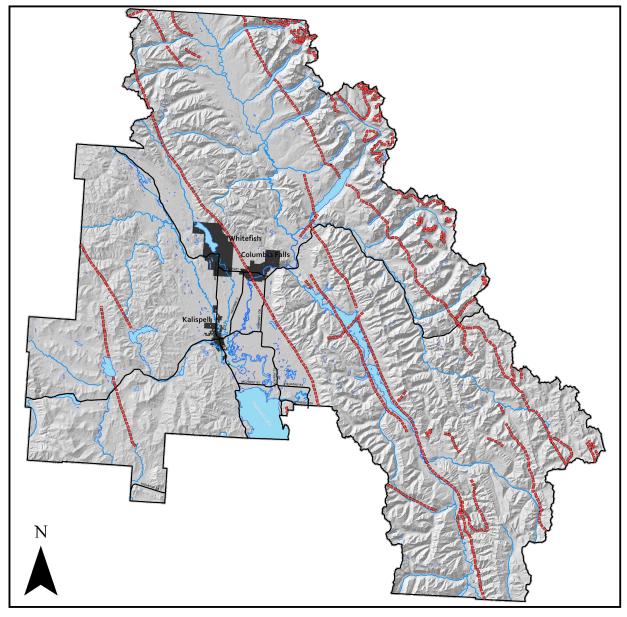
MAP 2.6 (A) FLOODPLAIN

FLATHEAD COUNTY GROWTH POLICY





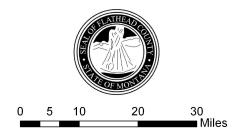
SOURCE: FLATHEAD COUNTY GIS DEPARTMENT: FEMA FLOOD INSURANCE RATE MAPS ILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Chapter 2 - Land Use



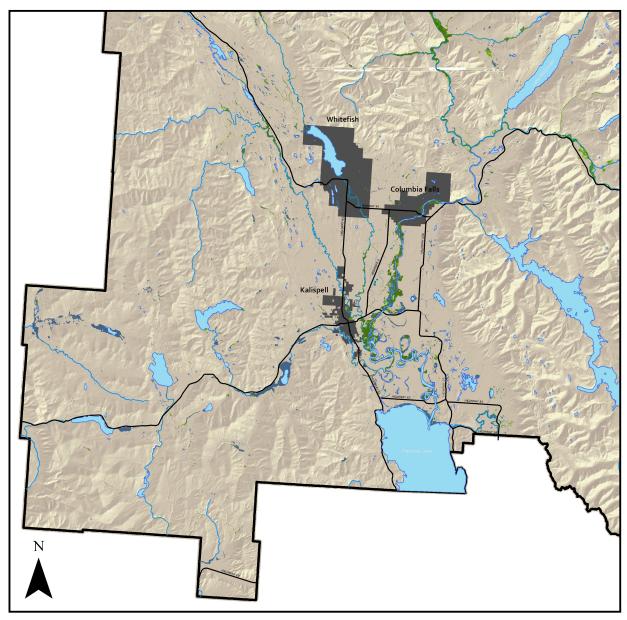
MAP 2.7 GEOLOGIC FAULT LINES

FLATHEAD COUNTY GROWTH POLICY





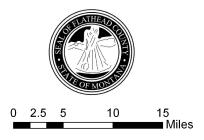
SOURCE: FLATHEAD COUNTY GIS DEPARTMENT
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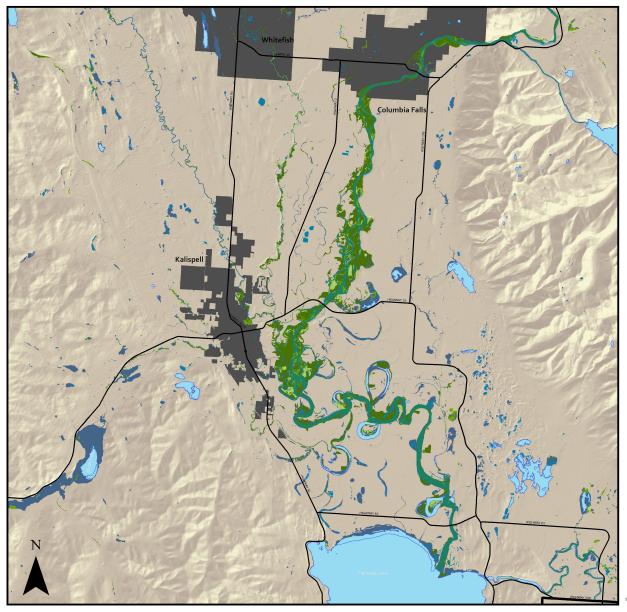
MAP 2.8 WETLANDS

FLATHEAD COUNTY GROWTH POLICY





SOURCE: U.S. FISH & WILDLIFE SERVICE, MONTANA NATIONAL HERITAGE PROGRAM (MTNHP), NATIONAL WETLANDS INVENTORY (NWI) FOR MONTANA, 2011 FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Chapter 2 - Land Use



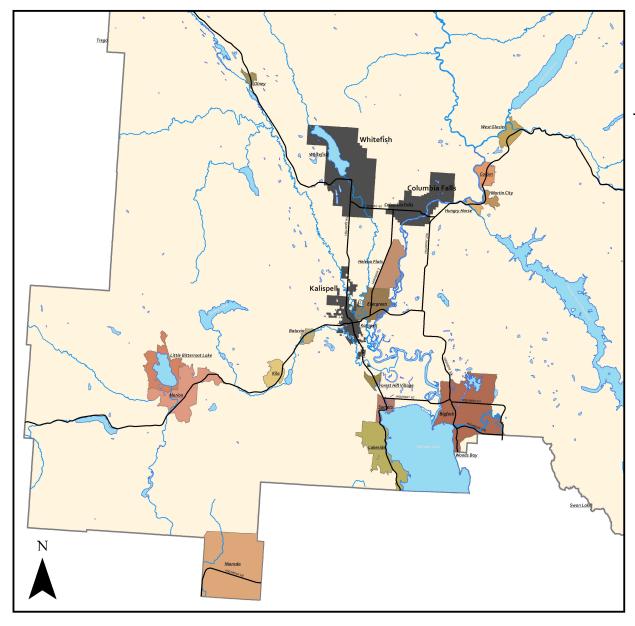
MAP 2.8 (A) WETLANDS

FLATHEAD COUNTY GROWTH POLICY



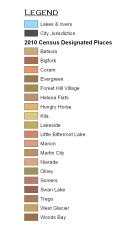


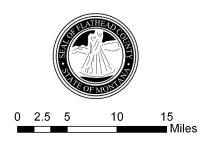
SOURCE, U.S. FIGH & WILDLIFE SERVICE, MONTANA NATIONAL HERITAGE PROGRAM (MTNHP); NATIONAL WETLANDS INVENTORY (NWI) FOR MONTANA, 201
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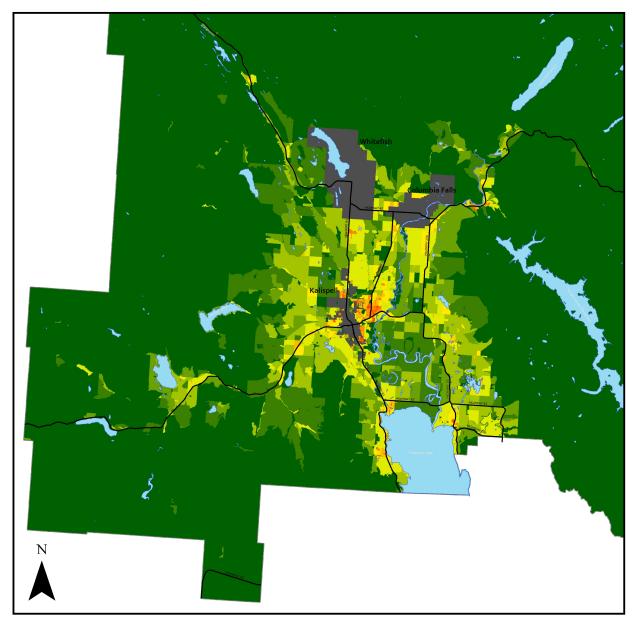
MAP 3.1 2010 CENSUS DESIGNATED PLACES

FLATHEAD COUNTY GROWTH POLICY





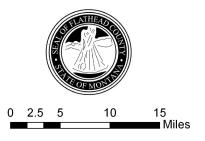
SOURCE: 2010 U.S. BUREAU OF THE CENSUS TIGER / LINE FILE - MT CENSUS PLACES WITH POPULATION DATA FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY\UPDATE 10-11\Mapping\Grapter 3 - Demographics & Housing



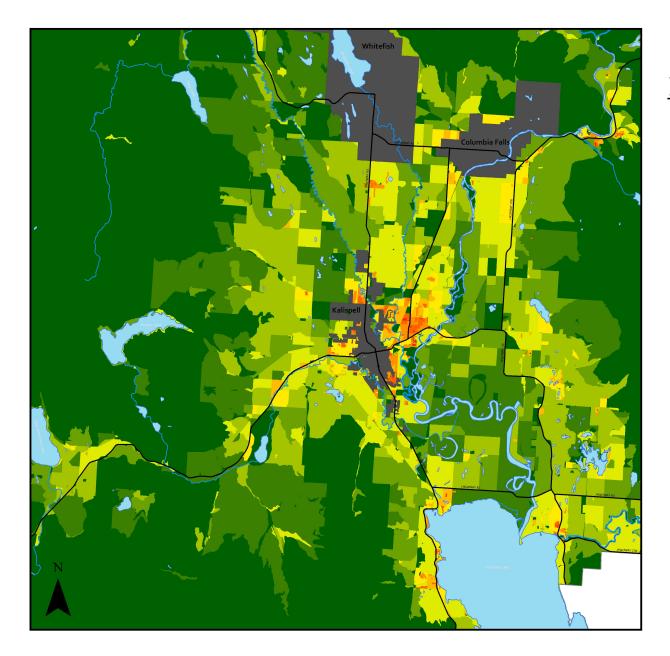
MAP 3.2 2010 POPULATION PER SQUARE MILE

FLATHEAD COUNTY GROWTH POLICY





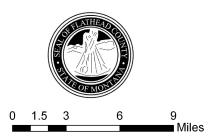
SOURCE: 2010 U.S. BUREAU OF THE CENSUS TIGER/LINE FILE-MT CENSUS BLOCKS WITH POPULATION DATA
FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY\UPDATE 10-11\Mapping\Grapter 3 - Demographics & Housing



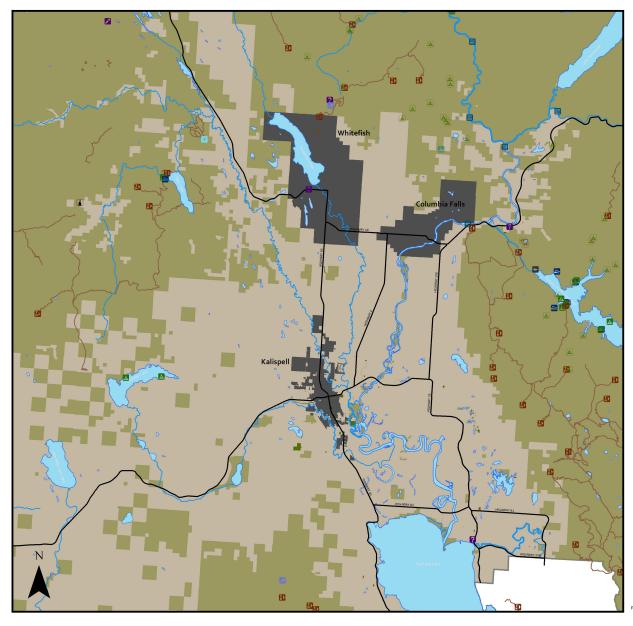
MAP 3.2 (A) 2010 POPULATION PER SQUARE MILE

FLATHEAD COUNTY GROWTH POLICY





SOURCE: 2010 U.S. BUREAU OF THE CENSUS TIGER/LINE FILE MT CENSUS BLOCKS WITH FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH FOLICY\GROWTH POLIC



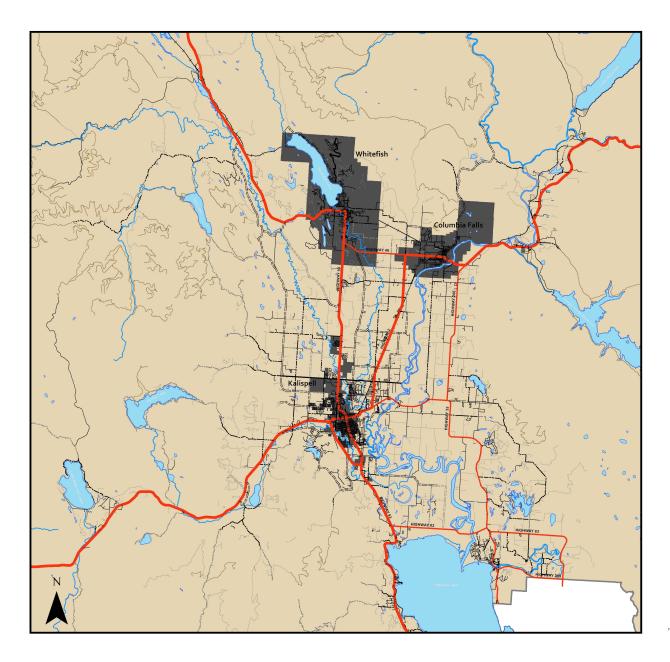
MAP 4.1 EXISTING PARK & RECREATION SITES

FLATHEAD COUNTY GROWTH POLICY





SOURCE: FLATHEAD COUNTY GIS DEPARMENT
ILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY\UPDATE 10-11\Mapping\Chapter 4 - Parks & Recreation



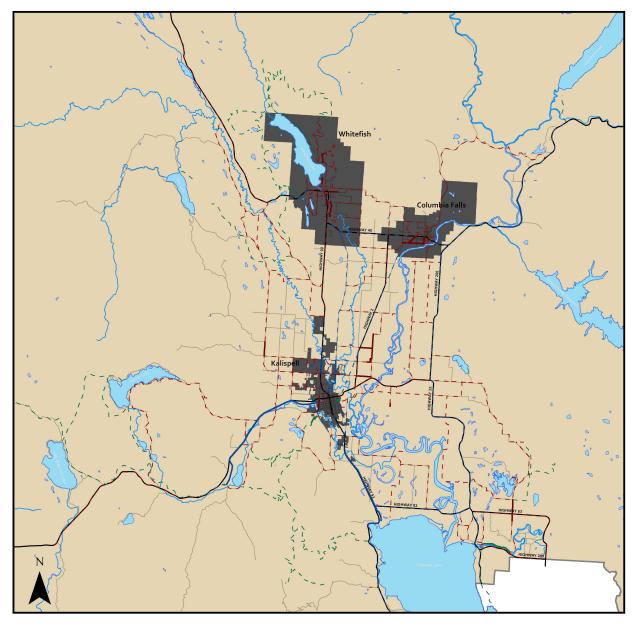
MAP 6.1 TRANSPORTATION NETWORK

FLATHEAD COUNTY GROWTH POLICY





SOURCE: FUATHEAD COUNTY GIS DEPARTMENT
ILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\MAPPING\CHAPTER 6-TRANSPORTATION



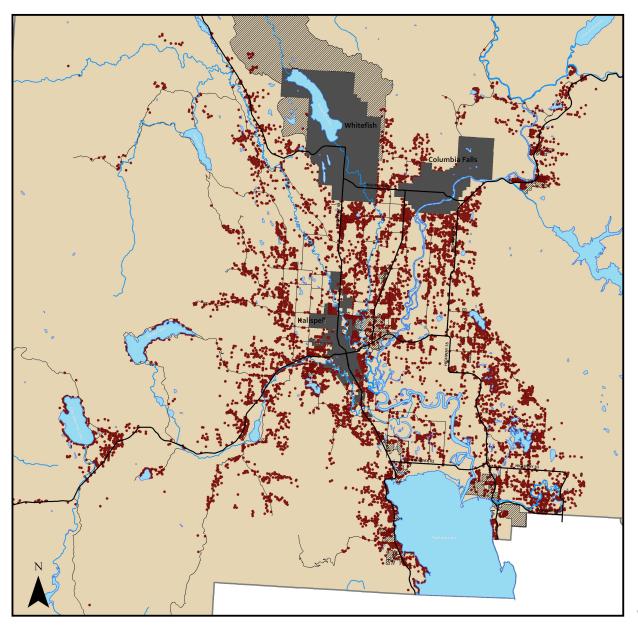
MAP 6.2 BIKE & PEDESTRIAN PATHS NETWORK

FLATHEAD COUNTY GROWTH POLICY





SOURCE: FLATHEAD COUNTY GIS DEPARMENT
FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY\UPDATE 10-11\Mapping\Chapter 6 - Transportatio

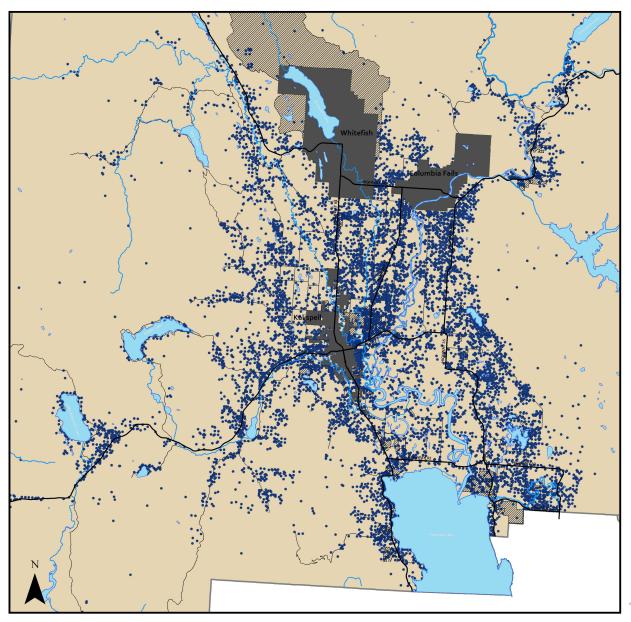


MAP 7.1 EXISTING SEPTIC SYSTEMS FLATHEAD COUNTY GROWTH POLICY





SOURCE: FLATHEAD COUNTY GIS DEPARTMENT, 2010 U.S. BUREAU OF THE CENSUS TIGER/LINE FILE - MT CENSUS BLOCKS
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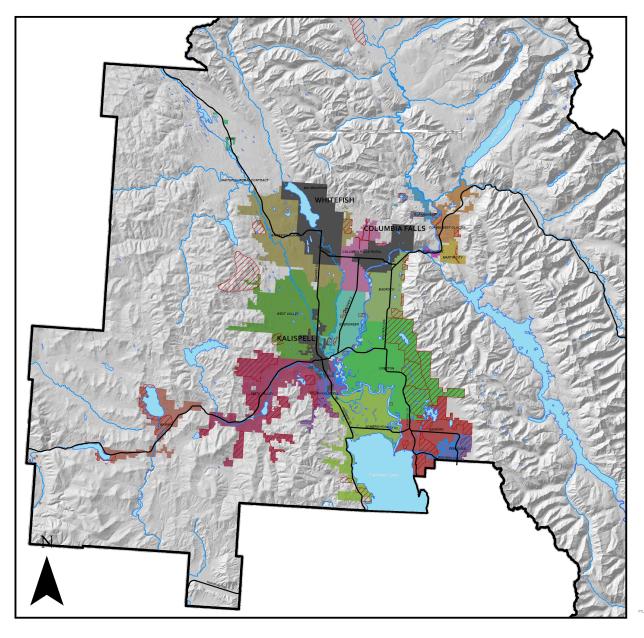


MAP 7.2 EXISTING WELLS FLATHEAD COUNTY GROWTH POLICY





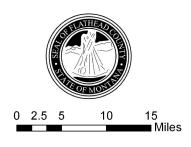
OURCE: 2011 WELL DATA - GROUNDWATER INFORMATION CENTER (GWIC), MT BUREAU OF MINES & GEOLOGY; 2010 U.S. BUREAU OF THE CENSUS TIGER/LINE FILE - MT CENSUS BLOCKS FILE PATH: SYSTEPZYLONG PANGE PLANNING VARIOUTH POLICY/GROWTH POLICY (IPDATE 10-11) Mareney Conserved 7-Plum in Faculties & Services



MAP 7.3 FIRE DISTRICTS

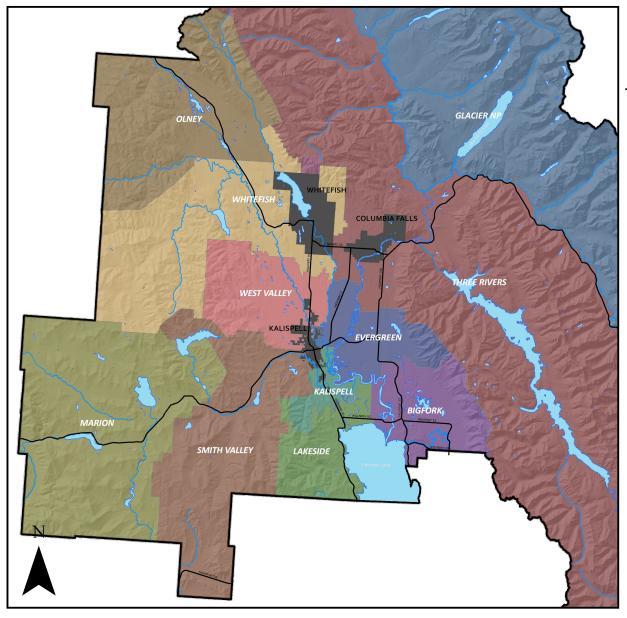
FLATHEAD COUNTY GROWTH POLICY





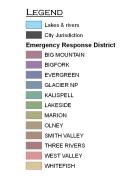
SOURCE: FLATHEAD COUNTY GIS DEPARTMENT

LE PATH: S'\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Grapter 7 - Public Facilities and Service:



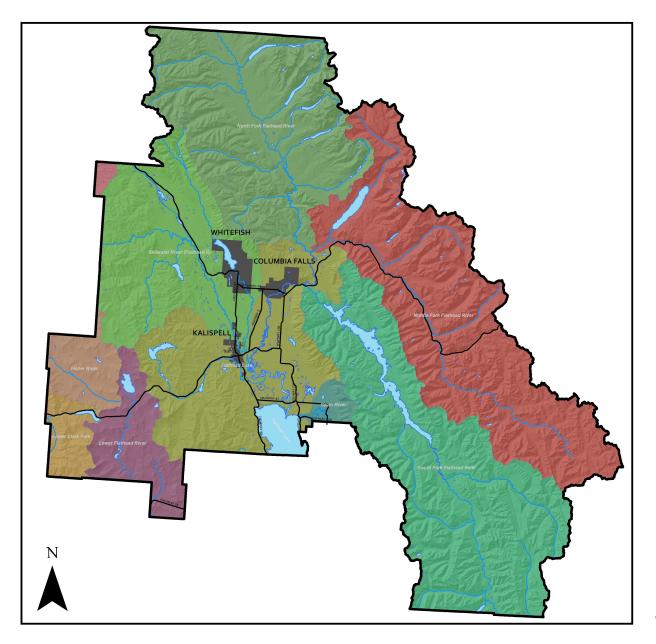
MAP 7.4 EMERGENCY RESPONSE DISTRICTS

FLATHEAD COUNTY GROWTH POLICY





SOURCE: FLATHEAD COUNTY OFFICE OF EMERGENCY SERVICES: EMSORLFLATHEAD COUNTY 12211
FILE PATH: S:\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mapping\Chapter 7 - Public Facilities and Services



MAP 8.1 FLATHEAD WATERSHED

FLATHEAD COUNTY GROWTH POLICY





SOURCE: MONTANA SUBBASIN HYDROLOGIC UNITS, MONTANA NATURAL RESOURCES CONSERVATION SERVICE (INRCS)
FILE PATH: S'\FCPZ\LONG RANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\Mappins\Chapter 8 - Natural resources

Ybe 671 HIGHWAY **DESCRIPTION OF SOIL CLASSIFICATION UNITS** QaI ALLUVIUM OF MODERN CHANNELS AND FLOODPLAINS (Holocene) - Light to medium brown and grayish brown sand and silt, and lesser Qgta GLACIAL TILL, ABLATION DEPOSIT (upper Pleisto cene) - Granule, pebble, and cobble conglomerate, and lesser amounts of light gray, liξ amounts of pebbles, cobbles, and clay along active stream valleys and areas of sheetwash; contains minor amount of colluviumalong the bases of steep brownish gray, pale yellowish brown, grayish orange, and pale brown, compact beds of diamicton and stratified beds of sand; interstratified complex slopes; thicknesses average 30 feet, but reach 90 feet in paleochannels south and southeast of Kalispell; ground water commonly near land surface; massive till, poorly bedded ice-contact deposits, and well-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and kell-stratified drift; formed during disintegration of glacial ice; characterized by knob and drift; formed during drift drift; formed d topography with some elongated crests of glacial landforms representing crevassefills, eskers, and kames; thicknesses range from 1 to 150 feet; althou lateral and vertical variations in lithology affect potential for groundwater development, typically produces water to wells in most locations. Qaf ALLUVIAL FAN DEPOSIT (Holocene) - Grayish brown and light to dark yellowish brown sand, silt, pebbles, cobbles, and boulders deposited GLACIAL ESKER DEPOSIT (upper Pleistocene) - Pebbles, cobbles, boulders, and some light to medium brown sand; most clasts are v in fan-shaped landforms down slope from canyon mouths; thicknesses range from 1 to 60 feet; ground water commonly near land surface locally produces ounded cobbles; some exposures display horizontal bedding; clasts of grayish black tomedium dark gray metacarbonate, argillite, light gray and mediu ray bedded quartzite, weathered calcareous mudstone, and distinctive cobbles of dark gray to black basalt (Purcell Lava); forms narrow, sinuous ridge Qe EOLIAN DEPOSIT (Holocene) - Dark to light yellowish brown fine and very fine-grained well sorted sand deposited as eolian dunes and sand thicknesses range from 1 to 60 feet; ground-water levels typically below the unit, but the unit may be saturated seasonally; the unit is not known to produ sheets; grains mostly of quartz with common argillic or calcareous rock fragments; pebble-sized clasts of argillite, quartzite, and weakly consolidated (Glacier Peak ash, dated at 11,200 14C yr; Carrara, 1995) occurs within or near the base; bedding is massive where the unit is thin, but windripple cross-GLACIAL ICE-CONTACT DE POSIT (upper Pleistocene) - Light to dark brown and brownish gray pebble and cobble conglomerate with less laminations and large-scale sandflow cross stratification are common in thicker deposits; the deposit is truncated near stream courses by alluvium soils amounts of laminated silt and clay, bedded sand, diamicton, and boulder conglomerate; clast lithologies dominated by roundedand subrounded argillii occur at the surface and buried within the deposit; dune forms are poorly preserved due to modification during stabilization and postdepositional erosion; metacarbonate, and quartzite with minor siltstone, sandstone, fossiliferous limestone, and distinctive cobbles of dark gray to black basalt (Purcell Lav thickness ranges from 1 to 40 feet; water table is typically below the unit, but the unit may be saturated seasmally; not known to produce significant beds of different lithologies are superimposed and cross cutting, forming complex sequences; soft and frozen-sediment rotational and collapse feature are common; conglomerates display large- and very large-scale tabular and trough cross-stratification, crude horizontal stratification in a matrix of granul and coarse-grained sand, and clast imbrication; laminated silt and clay sequences are mostly less than a few feet hick and discontinuous in outcrop; sa QIK LAKE DEPOSIT (Holocene) - Mostly calcareous silt, clay, and organic debris deposited in perennial and ephemeral lakes; includes minor occurs in cross-stratified, upward-fining beds, and as apparently massive, well-sorted beds with intercalated silt and clay laminae that show collap amounts of sand and gravel; distribution of unit inferred be neath lakes and marshes; thickness unknown, but likely 1-30 feet; ground water commonly near structures; diamictons are typically less than a few feet thick and occur as sheet-like bodies and dipping beds apparently deposited by debris flows; for individual conical and stream-lined hills (kames), flattopped ridges (kame terraces), and linear deposits (crevassefills), and hummocky topograp (Gravenor and Kupsch, 1959; Flint, 1971; Goldthwait, 1975); changing proportion of lithologies causes unit to grade into areas mapped as till ablatic deposits, and glacial esker deposits; thicknesses range from 1 to 150 feet, lateral and vertical variations in lithologyaffect potential for ground-wat Qls LANDSLIDE DEPOSIT (Holocene and upper Pleistocene) - Boulders, cobbles, and pebbles in a light to dark brown matrix of sand and silt; clasts are mostly angular and subangular; deposited by gravity sliding to an area near the base of a hill or mountain slope; surface of unit is typically development in the unit, typically productive to water wells in most locations. hummocky and lobate in form; thickness ranges from 1 to 80 feet; ground watercommonly near land surface; locally produces water. GLACIAL OUTWASH DEPOSIT, OLDER (Pleistoce ne) - Light and medium brown, vellowish brown, and brownish gray granule, pebble, a Qao ALLUVIUM, OLDER (Holocene) - Light to dark brown and grayish brown sand, pebbles, cobbles, and minor silt and clay; upper surface forms boulder conglomerate and coarse-grained sand; local calcium carbonate cement; clasts of quartzite and metacarbonate; trough cross-stratified a channelized beds; clasts are imbricated; crops out beneath till in steep exposures in the northeastern part of the maparea; exposed thicknesses are abc terraces near major stream valleys; topographic position intermediate between active stream valleys and areas of outwash deposition; thickness ranges from 1 to 40 feet; ground water commonly near land surface; produces significant quantities of water. 100 feet (sec 7 DDB, T. 31 N., R. 19 W.); based on its location below till the unit correlates to upper part of the deep aquier north of Flathead Lake. QUATERNARY OR TERTIARY SEDIMENT (Pleistocene or Tertiary) - Pale yellowish orange to grayish orange (dry), moderate to da Qgo GLACIAL OUTWASH DEPOSIT (upper Pleistocene) - Light brownish gray and light to dark brown stratified gravel, sand, and silt; clasts of calcareous siltite, quartzite, intrusive igneous rocks, sandstone, and siltstone; well stratified, channelized, and cross statified with lenticular beds of yellowish orange (moist) stony day loam (diamicton); clasts include weathered metacarbonate and argillite; unit infills wide fractures in Belt Supergro imbricated cobbles and pebbles; rare boulders and larger clasts indicate ice-rafting; upper surface is broad and even with local closed depressions and bedrock and occurs beneath light brown unweathered till in limited areas; diamicton may be either an older till (Stoffel, 1980) or Tertiary debris fl deposits (P. C. Ryan, written comm., 1999); exposed thickness about 30 feet; subsurface distribution and aquifer potential ofthe unit is poorly know abandoned glacio-fluvial channels; thicknesses average 50 feet and are locally more than 140 feet; ground water commonly near landsurface; produces however its dayey texture suggests the unit is not an aquifer. QgI GLACIAL LAKE DEPOSIT (upper Pleistocene) - Light yellowish brown, pale brown, and light brownish gray, calcareous fine sandy silt, clayey KISHENEHN FORMATION (upper Eocene-Miocene) - Yellowish brown to orange medium and coarse-grained pebbly sandstone with piec silt, and minor clay; thin to medium laminations rhythmically alternate between darker-colored clay-rich laminae and lighter-colored and thicker silty and of carbonized wood fragments, pebble and cobble conglomerate, beds of carbonaceous shale, and light olive gray, dusky moderate yellow, and gray sandy laminae; deposit has broad, even surfaces except for few closed depressions; deposited from suspension in proglacial lakes formed behind glacial orange mudstone; conglomerate with silty, sandy matrix, well and moderately rounded clasts of argillite, quartzite, and orange siltstone; horizontal beddi moraines, thicknesses average 100 feet and are locally greater than 270 feet; typically watersaturated, but produces little water to wells. and imbricated fabric; sandstone and conglomerate beds have channelized, erosional bases; mudstones have common scoopshaped, concave-u fractures; moderately indurated with calcium carbonate cement; calcium carbonate occurs locally as 0.040.2" thick rinds on clasts; steeply dippir QgIs GLACIAL LAKE DEPOSIT, SANDY (upper Pleistocene) - Light yellowish brown fine to medium-grained sand, conglomerate, sandy silt, silt, cemented fractures in sandstones; about 120 feet of section crops out in steep exposures (Constenius, 1988); water wells competed in sandstone at and minor clay, similar to Qql, but consists predominantly of sand with lesser amounts of rhythmically laminated clay and stly and sandy laminae; lenticular conglomerate yield adequate supplies of water for household use in a few partsof the northeastern part of the map area and in the valley of the North Fo granule, pebble, and cobble conglomerate locally overlies beds displaying softsediment deformation; deposited in nearshore environments in proglacial lakes; deposits have broad, flat surfaces and few closed depressions; thicknesses average 50 feet but locally are more than \$0 feet; typically water-Ybe BELT SUPERGROUP ROCKS, UNDIVIDED (Pre cambrian Y) - Numero us stratigraphic units composed mostly of sil tite, metacarbonate, an saturated, but only locally productive to water wells. quartzite (Johns, 1970; Winston, 1986; Harrison and others, 1992, 1998) and minor amount of igneous rocks (McGimsey, 1985); water wells completedr Qgt GLACIAL TILL (upper Pleistocene) - Predominately granules, pebbles, cobbles, and boulders supported by a matrix of light gray, light brownish gray, pale yellowish brown, grayish orange, and pale brown, compact sandy or silty loam (damicton) deposited by active glacial ice; minor amounts of stratified sand and gravel (stratified drift) deposited by flowing water; clast lithologies include light and medium bluish gray metacarbonate, white weathered metacarbonate, fine-grained quartzite, argillite, diorite, and distinctive cobbles of dark gray to black basalt with amygdules filled with white quartz that contains many fluid inclusions, apparently derived from the Purcell Lava of the Belt Supergroup, which is presentin Glacier National Park and the Whitefish Range to about 10 miles north of Columbia Falls (Johns, 1970; McGimsey, 1985); clasts typically rounded and subcounded; more resistant clasts are commonly striated; crests of glacial landforms include drumlins and moraines; occurs as a veneer over Belt Supergroup rocks in moraines; mountainous areas; glacio fluvial channels cut across the unit and some of the drumlins and moraines; thicknesses average 90 feet and are locally more than 250 feet; typically water-saturated, but produces little water to wells except from bodies of stratified drift.

MAP 9.1 GRAVEL RESOURCES MAP

FLATHEAD COUNTY GROWTH POLICY

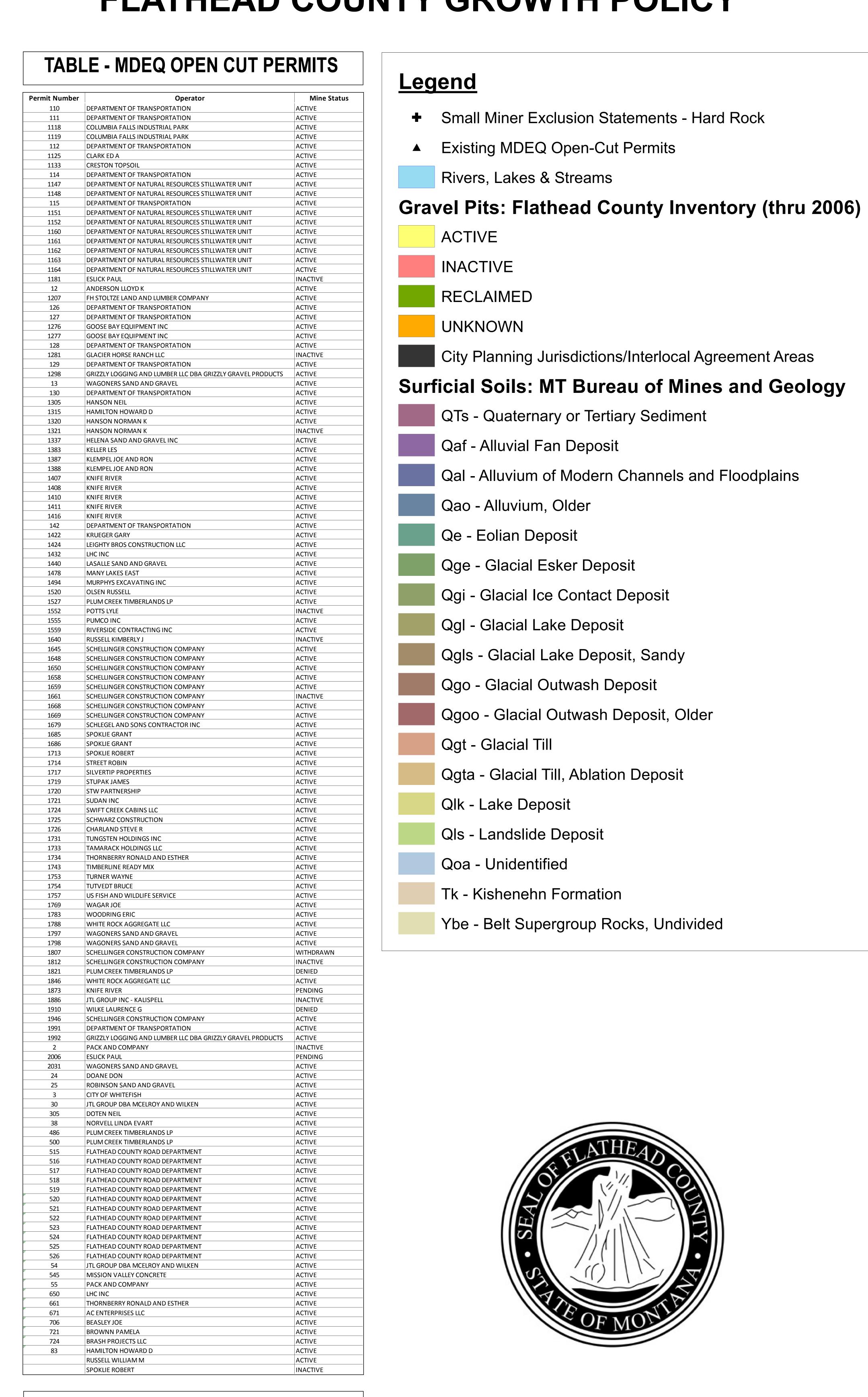


TABLE - MDEQ SMALL MINER EXCLUSION STATEMENTS

TABLE - MDEQ OPERATING PERMITS, HARD ROCK

MULTIPLE QUARRY SITES

RIP RAP ROCK

BALLAST, RIP-RAP

OPEN PIT, UNDERGROUND, VAT LEACH COPPER, GOLD, LEAD, OXIDES, SULFIDE, ZINC ACTIVE

PROGRAM COMPANY NAME

JENSEN PAUL

JARVIS WILLIAM

KLEMPEL JOE & GINA

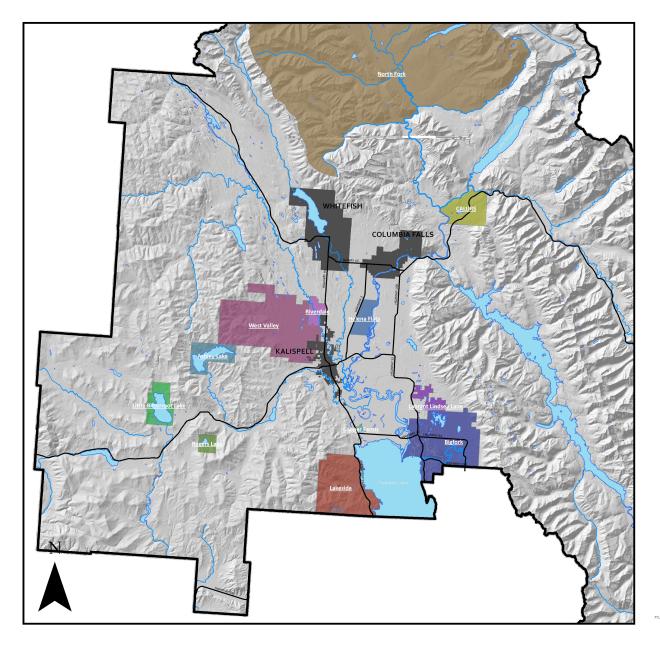
HOG HEAVEN MINE

WEAVER GRAVEL QUARRY

MULTIPLE QUARRY PERMIT

F H STOLTZE LAND & LUMBER CO

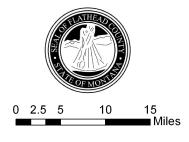
GRIZZLY LOGGING & GRAVEL PRODUCTS INC



MAP 11.1 NEIGHBORHOOD PLANS

FLATHEAD COUNTY GROWTH POLICY





SOURCE: FLIATHEAD COUNTY GIS DEPARTMENT

E PATH: S:\FCPZ\LONG BANGE PLANNING\GROWTH POLICY\GROWTH POLICY UPDATE 10-11\MAPPINS\CHAPTER 11-NEIGHBORHOOD PLAN