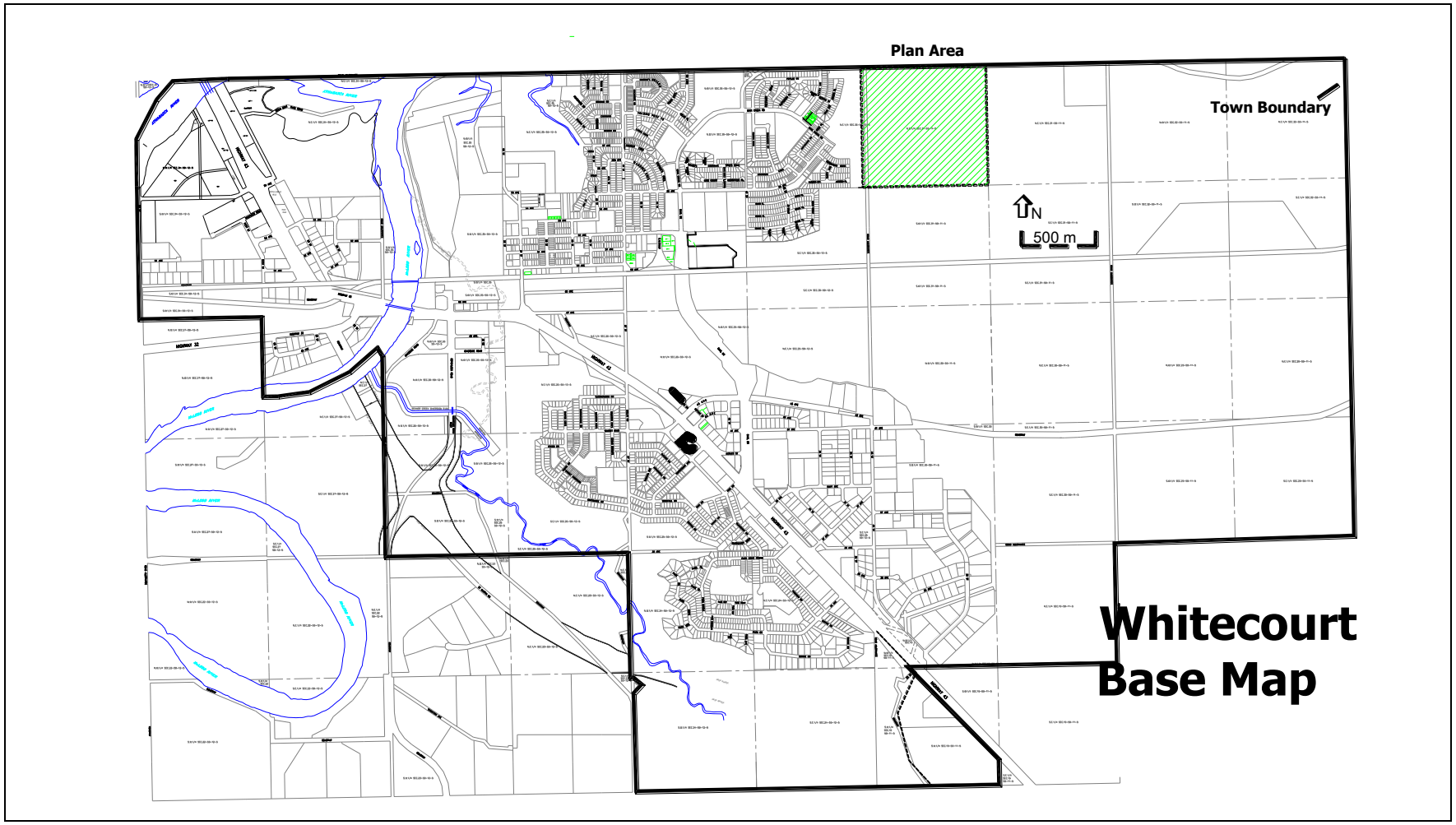
Preliminary Discussion Paper
Athabasca Flats East Area Structure Plan
October 25, 2006

Town Of Whitecourt
Planning and Works


Plan Area
Town Boundary
N
500 m
Whitecourt
Base Map

Introduction

The Athabasca Flats East Area Structure Plan describes potential development of the NW 31 58 11 w 5th. This parcel of land is a quarter section in the north east area of Whitecourt. It is bounded on the west by existing urban residential development, on the north and east by agricultural use, and on the south by forested land. It is entirely within the Town, however the land (and road) on the north boundary lies within Woodlands County. Though adjacent undeveloped parcels are not included in this plan, the plan identifies potential development in these areas to allow coordination of land uses, roads, and utilities.

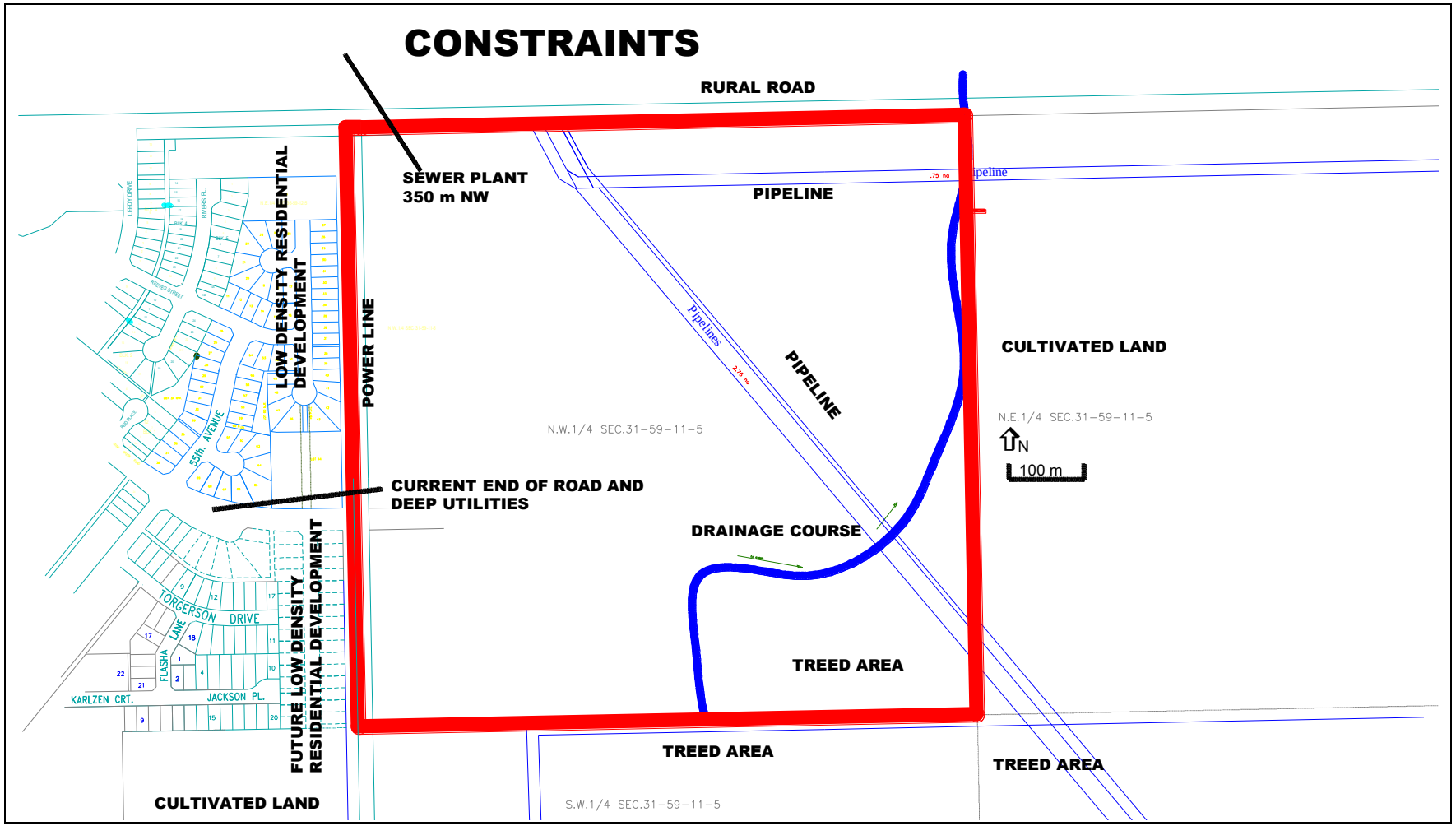
Notices of Plan Preparation were advertised in the Whitecourt Star, mailed to adjacent land owners, utility companies, school districts and Woodlands County. Information and input has been provided from several parties. The draft plan reflects the Town's intention to continue residential development in the valley area and meet the requirements identified by interested parties.

Existing Situation

The land west of the area has been developed for urban residential uses, including low density, medium density, high density, and manufactured housing. Non residential uses include schools, churches, and a neighborhood commercial site. Gross residential density on the quarter section to the west is xx dwelling units per acre. The Town's wastewater treatment plant and major sports fields are north west of the site, while agricultural uses lie to the north, north east, and east. Minor rural residential development exists further east, as does a site reserved for a heavy industrial development. Land south of the site is native forest, which is broken by the CN Rail Line running east/west about 500m south of the site. Land south west of the site is designated for residential use.

The existing road network includes an arterial road (Mink Creek Road) which connects the existing residential development to the downtown core. It is designed to enter this parcel on the west side, about 250m north of the south boundary. Mink Creek Road has sufficient capacity to support additional residential development of over 2500 dwelling units. Increased traffic on this road will require eventual installation of traffic signals at the intersection of Mink Creek Road/Dahl Drive/55th Avenue, as identified in the Athabasca Flats Area Structure Plan. Flats Road, which lies north of this parcel, is a rural road which services the agricultural and country residential activities in Woodlands County, north and east of the area. An undeveloped road allowance lies on the west boundary of the property. This road allowance is occupied by an informal trail and a Fortis electrical power line.

The parcel is a relatively level area, with a slight slope (less than 0.1%) from the south west down towards the north east. Surface drainage is to the north east is in prominent drainage courses that are about one metre deep and up to 70 metres wide. The site


CONSTRAINTS
RURAL ROAD
SEWER PLANT
350 m NW
PIPELINE
Pipeline
.75 ha
Pipelines
2.76 ha
PIPELINE
POWER LINE
LOW DENSITY RESIDENTIAL
DEVELOPMENT
CULTIVATED LAND
N.W.1/4 SEC.31-59-11-5
N.E.1/4 SEC.31-59-11-5
N
100 m
CURRENT END OF ROAD AND
DEEP UTILITIES
DRAINAGE COURSE
TREED AREA
FUTURE LOW DENSITY
RESIDENTIAL DEVELOPMENT
TORGERSON DRIVE
FLASHA LANE
KARLZEN CRT.
JACKSON PL.
53th. AVENUE
TREED AREA
TREED AREA
CULTIVATED LAND
S.W.1/4 SEC.31-59-11-5

drainage continues north to the Athabasca River, about 1000m north of the property. The primary surface elevation ranges from a high of 687.4 metres to a low of 686.0 metres. The river surface elevation at the natural drainage course discharge is below 682.0m except during peak flows.
The design flood level (100 year) is 686.0 at the sites west end and 685.0m at the east end (Alberta Environment Flood Hazard Study 1989). The entire parcel is above the 100 year flood level.

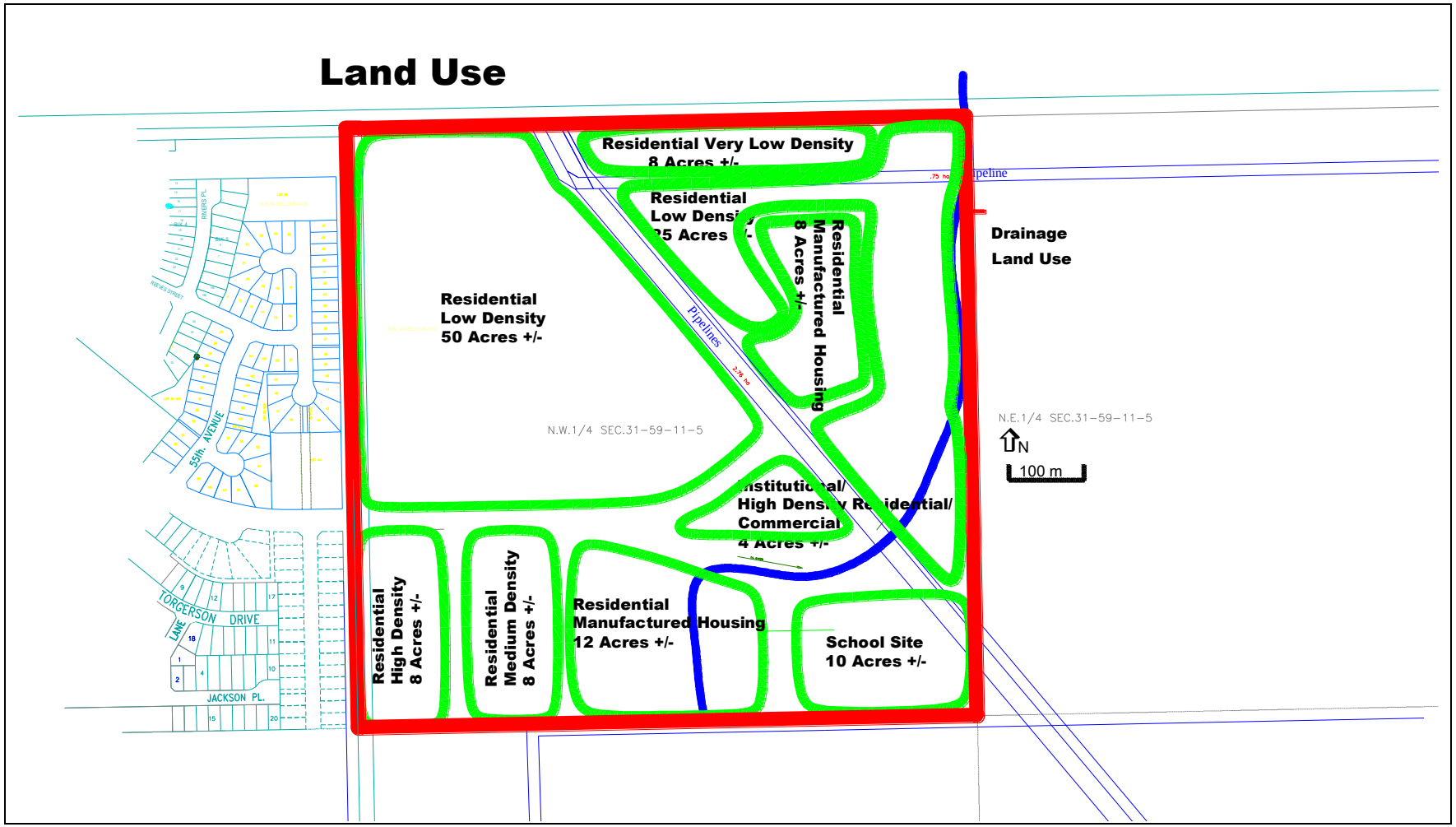
Most of the parcel has been cleared for cultivation. Some of the clearing debris has been deposited in the drainage courses, and must be removed if these are to be used for storm water drainage. The west boundary of the site is a tree line of poplar and willow. Portions of this may be retained, however as the trees are mature, some will be lost due to nearby ground disturbance during development, while others will be failing due to advanced age. Approximately 15 acres of a mature mixed wood forest remains in the south east corner. This area is contiguous with the forested crown land to the south and south east. It provides a large expanse of natural habitat, with a moderate deer population. Urban development would require removal of this tree cover.

The geotechnical study of the site indicate that there is a thin layer of topsoil (0.15 to 0.25m), a layer of highly plastic clays (between 0.5 and 3.0m), followed by gravel deposits to nine metres in depth. The water table lies within 2.0m of the surface. Residential development will prevent later access to the gravel deposit. Residential development will likely cause a lowering of the water table.

The Whitecourt Wastewater Treatment Plant (sanitary sewer) is north west of the site. The nearest surface area affecting development is 350m from the parcel, which is beyond the 300m limiting distance for development. The site is not affected by regulatory setbacks from the sewer plant, however plant upsets may result in odors being generated which may be carried by the prevailing winds into the area.

Two natural gas pipeline corridors cross the parcel. One right of way parallels the north boundary, seventy metres south of Flats Road. The other corridor of two ROWs crosses the site diagonally, from the south east to the north west. These corridors cannot be built upon, but do not pose any restrictions to use outside of the right of way boundaries. They are obstacles to road and utility development.

Water and sanitary sewer lines terminate in Mink Creek Road, west of the site. A trunk sewer, running south to north, lies 60m west of the parcel boundary. The Town's servicing study identified a need for a sewer lift station in the north ease portion of the area, or in the land further east, to serve this site and future developments.


Land Use
Residential Very Low Density
8 Acres +/-
Residential
Low Density
25 Acres +/-
Residential
Manufactured Housing
8 Acres +/-
Residential
Low Density
50 Acres +/-
Drainage
Land Use
Pipelines
N.W.1/4 SEC.31-59-11-5
N.E.1/4 SEC.31-59-11-5
N
100 m
Institutional/
High Density Residential/
Commercial
4 Acres +/-
Residential
High Density
8 Acres +/-
Residential
Medium Density
8 Acres +/-
Residential
Manufactured Housing
12 Acres +/-
School Site
10 Acres +/-
55th. AVENUE
TORGERSON DRIVE
LANE
JACKSON PL.

PROPOSED DEVELOPMENT

Land Use

The plan provides for the extension of the urban residential development that lies to the west of the area. It includes low, medium, and high density residential sites, sites for manufactured homes, institutional sites, and a commercial site.

Very Low Density

The area designated for this use lies between the pipeline ROW and Flats Road. It is approximately seventy metres in depth, which precludes having two rows of lots. Large lot development can make use of the excess depth and offer urban serviced large residential properties. The area is west of the north south pipeline, which will delay development until utilities are extended to serve other land uses in this area. The large lot development could potentially compliment rural residential development north of Flats Road, and share the cost of utility and road improvements. Access to this area would initially be via Flats Road, however this road could be terminated at the pipeline crossing after a road connection to Mink Creek Road is developed to the east. This would reduce traffic in this area, and enhance the properties, while reducing rural traffic on the existing Flats Road further west.

Low Density

The greatest amount of area is designated for low density residential development. This is intended for single family and duplex dwellings. Land designated for this use will accommodate about five dwelling units per acre. The largest low density site lies north of the arterial road and west of the diagonal pipeline ROW. It is separated from the other land uses by these features, while it abuts existing low density residential development to the west. This area is readily developable with the initial extension of Mink Creek Road and utilities. It is not intended to provide road access to Flats Road from this area as this might result in rural traffic shortcutting through the neighborhood. The area will have a small neighborhood park on the west boundary, and open space for recreation use on the pipeline ROW.

The second low density area lies east of the diagonal pipeline ROW, adjacent to the east boundary of the plan area. This area is distant from existing utilities and roadways, which will delay its development to a later stage. As well, a lift station will be required for the sanitary sewer system to serve this area, the very low density area, and the land further east. The exact location and service area of the lift station will depend on the development of plans for the land to the east. A collector roadway will connect Flats Road to Mink Creek Road through this site, and serve as an interim major access to Flats Road until the land to the east and required arterial roads are built. The north part of the area will have a drainage swale on the east side, which will separate it from development further east and provides open space. The south portion of this area will have open space provided on the pipeline ROW. Depending on the timing

of development of the parcel to the east, the minor street network and utility system may be developed to connect these areas seamlessly.

Medium Density

The medium density area is intended to accommodate multi family dwellings where each unit has direct access to the outside, including duplexes, fourplexes, row houses, and town houses. The site is south of Mink Creek Road, across a collector roadway from the high density site.

High Density

High density residential developments (apartments) require direct access to major roads and should be buffered from lower density uses. These are the same attributes for commercial and institutional uses. The proposed area is south of Mink Creek Road, at the western edge of the parcel. This site is separated from the low density area to the north by Mink Creek Road, and from the low density area to the west by a pipeline ROW with potential trail development. A collector roadway is proposed to separate it from medium density development to the east, and provide access to the eventual extension of 52nd Avenue. A high level of interest was expressed during plan preparation in having apartment sites available at an early stage of development. This area is developable upon extension of Mink Creek Road into the area. Development of the site for apartments should be initiated prior to allowing low density development on the land to the west to minimize opposition.

Manufactured Housing

Two sites are designated for manufactured housing. Manufactured housing can be developed as individual freehold lots, condominium lots, or leasehold (park) lots. Manufacture housing units do not require basements, which potentially allows slightly shallower sewer lines to be installed. With reduced sewer depth, the area east of the pipeline ROW may be serviceable without the lift station required for the low density development further east.

Table 1 Residential Uses

Residential (includes 4.5 acres of parks)	134 Acres
School	10 Acres
Inst/Comm/ High Density	4 Acres
Pipeline	9 Acres
Drainage	7 Acres
Total	164

Table 2
Land Uses

Residential Land Use	Area	Density	Dwelling Units
Very Low Density	8 Acres	2.5/ Acre	16- 24
Low Density	75 Acres	5/ Acre	300- 400
Medium Density	8 Acres	14/ Acre	90- 120
High Density	8 Acres	35/ Acre	240- 320
Manufactured Housing	20 Acres	7/ Acre	100-140
Total	129	5.5 to 8 per acre	746- 1004

Institutional/High Density Residential/Commercial Use

The intersection of the two arterial roads provides a site that has excellent access from the neighborhood and areas outside of the neighborhood. This location is well suited to institutional, high density residential, or commercial uses. The site is bounded on the north by Mink Creek Road and on the south and west by the natural drainage course. It is bisected by the second arterial route. Approximately one acre is available on the west, and three on the east. Additional land for parking may be available for the eastern site on the pipeline right of way. The site could support neighborhood commercial activity, such as a personal service establishment, restaurant, small retail, convenience store, service station, or child care. Institutional uses could include a church or other similar use that generates a large volume of traffic in a relatively short interval. High density residential development could provide up to one hundred dwelling units.

Specific designation of the site should await proposals from developers, with expectations that any of these uses could be accommodated.

School Use

Both school districts have expressed an interest in having a site in this area. Northern Gateway requires a site for a 650 student high school between 2008 and 2010, while Living Water require a site for a 350 student high school before 2015. The anticipated total school area required is between 15 and 20 acres. To accommodate the districts' future needs would require dedication of all available park and school reserves to one location, eliminating the provision of any neighborhood park space in this quarter section. We have attempted to meet the future school site needs by placing the site at the juncture of other properties, in anticipation that reserves will be provided from these properties to supplement the site size. Alternatively, if reserves are not provided in the time frame required, the adjacent land could be purchased to provide the required additional space. This site is intended for a school that will have students arriving from throughout the community, not a neighborhood level facility. It is located adjacent to the north/south arterial road to provide ease of access from the rest of town, and traffic circulation on two major routes (Mink Creek Road and 52nd Avenue). It is a potential site for a high school. Locating both school facilities at the same site allows sharing of sports fields and coordination of transportation. The site is south of the natural drainage course, and west of the diagonal pipeline ROW. The ROW may be useable for sport field use, increasing the effective area of the site. As the buildings on the site will occupy less than 20% of the total area, the remainder of the site could be used as storm water storage for major events (dry pond), providing a source of fill material for roads. With extension into adjacent quarter sections, a total site of up to 40 acres may be available in this location. A large site of this nature could be a new sport field, recreation, or education campus, anchored by the two high school developments.

SCHOOL YARD AND SPORTS FIELD AS DRY POND STORM WATER STORAGE

Parks

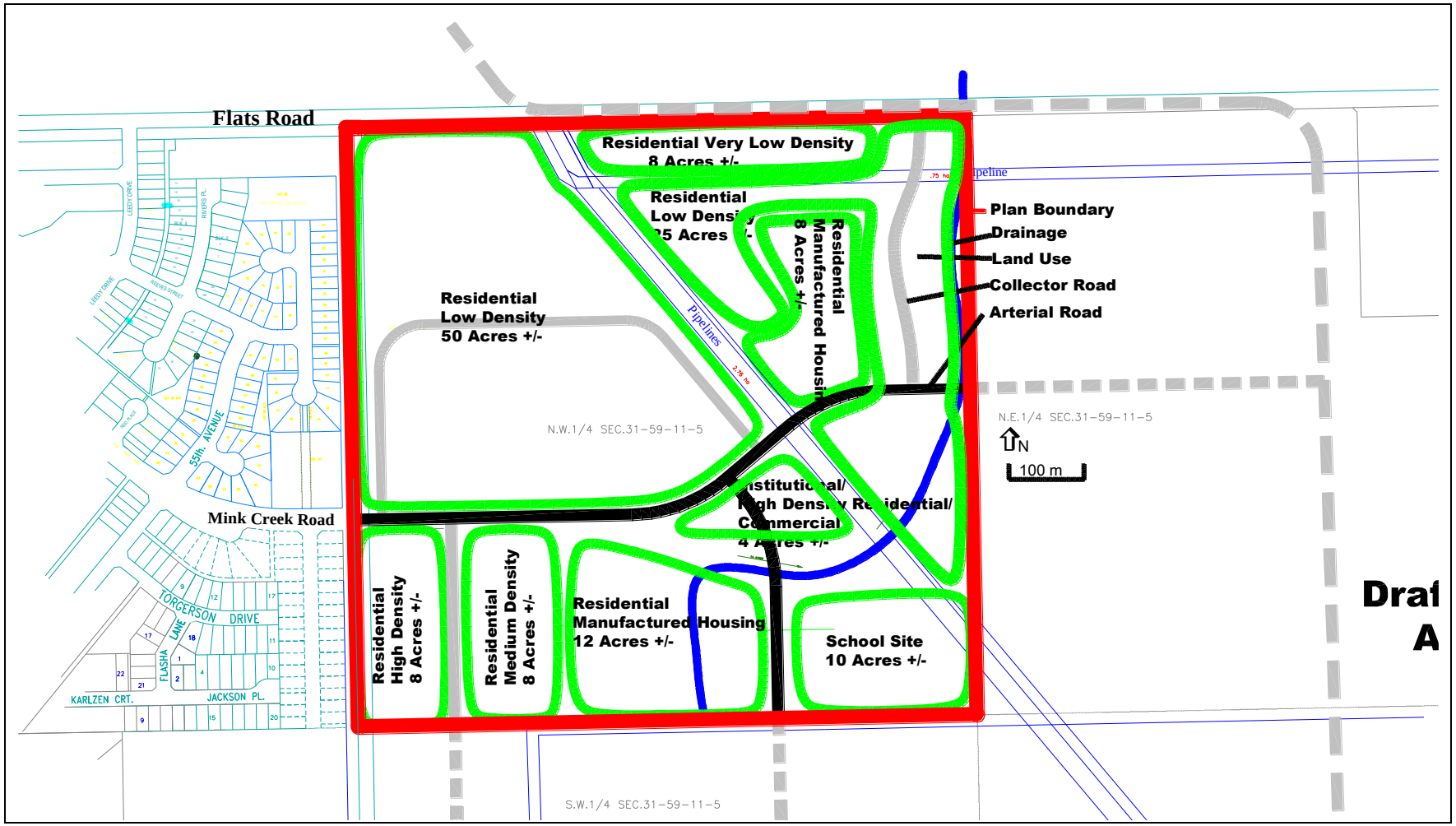
Ten percent of developable land is available for dedication to park and school uses. With the removal of the pipeline right of ways and natural drainage areas from the total area, approximately 145 acres of developable land lies in the plan area, leaving park and school dedication at 14.5 acres. With a school site of 10 acres, 4.5 acres is provided for neighborhood park sites. Additional open space may be available with leveling and grassing of the pipeline ROWs. Neighborhood park sites should be provided such that all residents are within a three minute walk of a park, without having to cross a collector or arterial road. With the exception of the easterly low density area, this criteria can be met. Park sizes of 0.4 to 0.8 acres have proven adequate in other areas of Whitecourt. Neighborhood parks will generally be located away from roads, with walkway access. Park site designation will be part of detail subdivision design. The school site will serve as the major neighborhood park area, with sport field development and other facilities (skating rink, hard surface play area) dependant on school and community involvement. The storm water drainage ponds and channels will be passive open space, providing visual relief. They are not intended for active recreation use, but may be used for trails.

Roads

The plan provides the approximate alignment of major roads through the area. Arterial and collector roads are shown. Access from arterial roads may be provided to high density residential, commercial, or institutional lots, or to major access points to the medium density and manufactured housing sites. Fencing will be required between arterial roads and adjacent low density, medium density, and manufactured housing sites. Mink Creek Road will be the initial connection to the rest of the community, and extend through the site to the property to the east. It will be a residential arterial road. The second arterial road will connect Mink Creek Road with the future extension of 52nd Avenue south of the site. It will provide access to the school site, and offer alternative access to downtown and the future east industrial site from this area. The intersection of the two arterials will provide easy access to a high traffic and visibility site, suitable for commercial, high density residential, or institutional uses. The configuration of this intersection is shown as a “T”, however alternatives such as speed curves or roundabouts will be evaluated at the detail design stage. Alternative treatments may replace the need for traffic signals that could arise if the school site generates a high traffic load.

There will be approximately 1200m of arterial road in the plan area, which is similar to the amount shown in the future development of each quarter section to the to the south and east. Arterial road right of ways will be 30m wide, with road surface of 15m. Separate (boulevarded) asphalt pathways will be provided on one side.

Collector roads are provided for local circulation and to direct traffic to the arterial network. They receive medium priority for snow and ice control and are used as school bus routes. The arterial and collector routes shown place all properties within 400m of a main road. The collector road that lies east of the high density site south of Mink Creek Road connects to the future 52nd Avenue, to allow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High Density Residential/
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Residential
Medium Density
8 Acres +/-
Residential
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12 Acres +/-
School Site
10 Acres +/-
Mink Creek Road
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S.W.1/4 SEC.31-59-11-5

direct access to the downtown area for the high volume of traffic expected from the high and medium density sites. This road is set east of the residential collector road north of Mink Creek Road to limit shortcutting of traffic from the low density residential area through the high density site. The collector road in the east low density area will be an interim access to Flats Road until the arterial road network extends further east. In addition to serving the immediate neighborhood, it will carry some rural traffic. Collector road right of ways will be 24m wide with 12.5m wide road surface. Sidewalks will be required on each side, while boulevards may be provided.
Local and minor local roads provide direct property access. They are not shown on the plan, but left to the detail neighborhood design level.

The existing undeveloped road allowance on the east boundary of the parcel is not required for road development. It contains an above ground power line that should be rerouted and buried. Closure of this road allowance, with the land to be included in the low and high density sites will be required.

Flats Road is not identified in the plan as a feature of this area. It is not required as an arterial, collector, or local road for this site. It may be required as a future route to a new crossing of the Athabasca River, linking the east industrial area, the hilltop industrial area, and this part of Whitecourt with a bridge north of the golf course. Widening of the right of way to 30m to protect the potential future use will be required during development of the very low density residential site. Closure of Flats Road between the wastewater treatment plant access and the pipeline crossing will direct rural traffic to the internal arterial road system, reducing traffic through Graham Acres sport field area, while not interfering with the potential for a future river crossing connection

Walkways

The major walkway and trail network in this area will include routes adjacent to arterial roadways and on the east boundary and diagonal pipeline right of ways if approval can be obtained. If Flats Road is closed east of the wastewater plant, a walkway could be placed on that closed portion of road to connect to the pipe line pathway. Minor walkway development may make use of the drainage course. The Town's current practice of allowing winter ATV traffic on designated routes could present an opportunity for this site, or a potential nuisance. If the diagonal pipeline ROW is designated as a route, it could form part of the trail network, provide access to land east of Town, and be signed and controlled at crossings as part of the development. However, if it is not an approved route, use of it will likely occur anyway, resulting in ongoing conflict adjacent owners expecting a quite environment. Prior to designation of the

ROW as a route, the eventual trail network and connections should be identified to ensure the designation does not result in directing ATV traffic where it is not welcome. Proper road crossings should be provided for pedestrian and ATVs at arterial roads.

Utilities

The geotechnical study for the site shows the water table to be within 2.0m of the surface. With a standard depth of cover for water and sewer lines of three metres, this requires placing utilities in the water zone, or raising the ground level. If fill is available, raising the ground level is preferred to de-watering and having a flooded pipe zone. Placing all deep utilities above the water table will require filling of roadways and portions of most sites. The material required for road work can be obtained on site, by overexcavating the drainage courses to serve as wet ponds. The site can be developed with conventional urban servicing, including franchise utilities, water, and sanitary sewer systems. To maximize the access to existing systems, the utility systems will initially extend in Mink Creek Road. This will allow development of the High Density, Medium Density, and a portion of the westerly Low Density sites. A second water and sewer connection will be required at the north west end of the site, to provide water system looping and maximize gravity flow of sanitary sewer. The water connection would bring a line from the land to the west in, parallel to Flats Road. The sewer line would cross Flats Road to connect to the system upstream of the treatment plant. This line would then extend roughly parallel to the diagonal pipeline crossing, through the site, with eventual extension (and service) to the land south of the plan area.
The area east of the diagonal pipeline may not be serviceable by gravity sewer to the proposed line. The manufactured housing area has the potential for gravity service as lines will not require depth to go under deep footings, however the Low Density site will require a lift station. This lift station will benefit the land to the east, and would be a joint project. The very low density development could potentially be served with low pressure sewer systems, pumping into the force main that will ultimately serve the lift station.

Public Transit Accomodation

Though Whitecourt is not currently served by public transit, future growth may result in a bus system being established. Transit routes will follow arterial and possibly collector roadways. The road network provides a circulation pattern for a bus route, with reasonable walking distances from all sites to the major roads. Bus stops on collector roadways do not require special treatment, however on arterial roads, pull outs improve safety and traffic flow. A pullout can also provide a location for community mail boxes. It is premature to identify locations for transit pullouts at the Area Structure Plan stage. Public transit requirements should be evaluated at the time of each subdivision approval.

Drainage

Storm water drainage on the site poses some challenges due to the high water table. A conventional underground piped system would be below ground water, and partially below river discharge level at times of the year. Maximizing the existing natural drainage courses and surface drainage will be pursued. The storm drainage system will be designed to accommodate 50% site coverage of buildings and hard surfaced areas in low density residential areas, and higher levels on other sites. On site storage of storm water will be accommodated by overexcavating the existing drainage course to develop wet ponds, with sufficient freeboard for storm events. Discharge will be through existing channels, at or near the current discharge rates. Where underground piped systems are required, they will flow to the wet ponds with submerged outfalls. Wet ponds will be excavated to a depth of three to four metres below the existing ground level, to ensure they are continually full of water. Bank slopes will be prepared as landscaped areas to offer some visual amenity, however the water areas will not be intended for contact recreation.

Additional storm water storage will be provided on the school site, which will be excavated to form a dry pond. The site will be excavated about one meter below existing ground level. It will be partially flooded during major storm events. Except for major events and the immediate aftermath of heavy rains, the site will be dry and useable for sport fields.

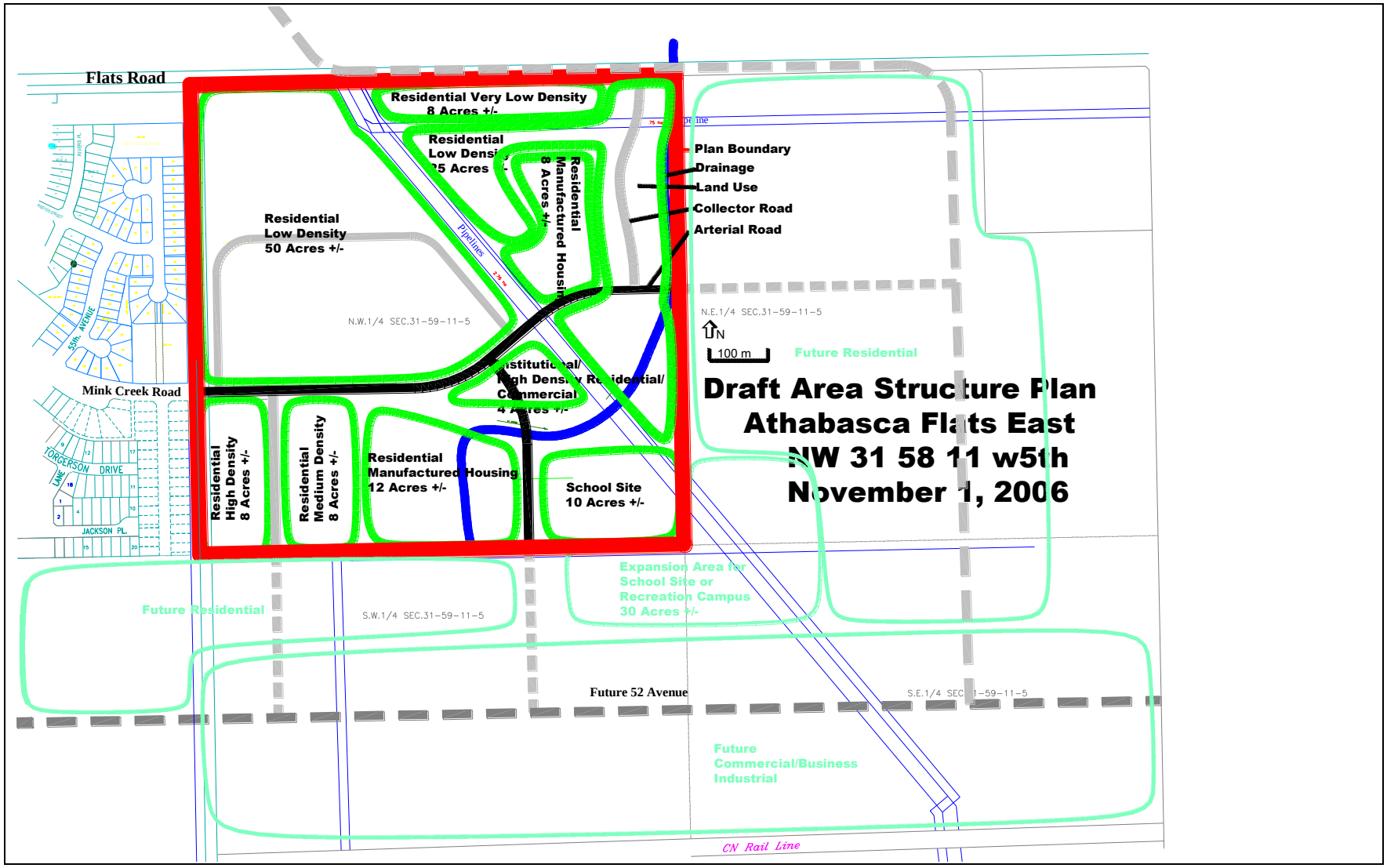
Pipeline ROWs

Pipeline ROWs occupy about nine acres of the plan area, which is near the amount of land dedicated to the school site. The ROWs restrict road and utility placement, present odd parcel configurations, cannot be built upon, and pose ongoing maintenance of open space issues. Incorporating them within private property lessens the burden on the Town, but may result in uncontrolled encroachment and increases the required vigilance of the pipeline operators. Alberta Municipal Affairs publication of Advisory Land Use Planning Notes on the Pipeline Urban Encroachment Problem states that right of way use for active open space such as playfields or trails , or parking is acceptable. We propose that the ROWs be utilized for trail development, included in the school site for sport field development, and partially included in the Institutional/High Density Residential/Commercial site for parking. There has been interest in the past in making land available for community gardens, as partment and even small lot residents do not have land available for gardening. The diagonal ROW might prove a suitable site for this. Community gardens contribute to the sustainability of the development, reduce municipal maintenance requirements of the land, and contribute to neighborhood ownership. The level of

finished landscape must be established in advance of development to ensure adjacent owners are aware of the condition that the ROWs will be left. A high level of finish will require considerable ongoing maintenance by the Town, while rough finish and naturalization may not be acceptable to urban residents. Leveling and establishing lawn grass on the ROWs would be a responsibility of the Town during trail development that coincides with residential development. Uniform fencing of the ROWs is required in advance of residential development to prevent construction activity over the lines. Contribution to the fencing by the pipeline operators should be pursued. Pending confirmation of pipe depths, no surface grade changes on the right of ways are anticipated except where road or utility work is required. Two road crossings, two drainage crossings, and three deep utility crossings are expected.

Site Grading

Major grading changes will be the excavation of the wet ponds and school site, and raising of the road right of ways. Lot grading to drain to existing grades will be encouraged to minimize import of fill. With the raising of roads ways, and of the road side of building sites, all footing levels will be above the water table. The pipeline ROW grades will not have major alterations, except where utility, road, or drainage requires. The existing topsoil layer should be stripped, and retained on site for landscape purposes. Where possible, the underlying gravel layer should be excavated and used on site to maximize the use of this resource before losing access.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Draft Area Structure Plan
Athabasca Flats East
NW 31 58 11 w5th
November 1, 2006
Expansion Area for
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30 Acres +/-
Future Residential
S.W.1/4 SEC.31-59-11-5
Future 52 Avenue
S.E.1/4 SEC.31-59-11-5
Future
Commercial/Business
Industrial
CN Rail Line

Schedule

1. Circulate Draft Area Structure Plan	October-November 2006
2. Amend Municipal Development Plan	December 2006
3. Revise Draft ASP	December 2006
4. Adopt ASP	February 2007
5. Initiate Land Sales	March 2007
6. Construct Mink Creek Road to east side of High Density	June-July 2007
7. Low Density site available	June 2007
8. High and Medium Density site available	June 2007
9. Manufactured Housing Site available	if 7 and 8 proceed in June 2007, then September 2007
10. School Site	if required, utilities and temporary access to site could be provided in 2008