

MACKENZIE COUNTY

TITLE	Urban Development Standards	POLICY NO.	DEV001
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LEGISLATION REFERENCE	Municipal Government Act, Section 5
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PURPOSE

Establish urban development standards to ensure consistent development is maintained within the hamlets of Mackenzie County.

POLICY STATEMENT

Mackenzie County and developers have a shared responsibility for defining and addressing the existing and future needs of the community by creating development policies consistent with community objectives. Mackenzie County will provide guidance for development objectives. These policies will be applied equitably and fairly to all within that community.

All beneficiaries of development should participate in the cost of providing and installing infrastructure in the community on an equitable basis that relates to the degree of benefit, through the use of off-site levies, local improvement bylaws and endeavor to assist clauses.

GUIDELINES

1. Mackenzie County will:
 - a) adopt development standard requirements for individual urban zoning as indicated in this policy and detailed within the GMIS,
 - b) determine who is responsible for installation of the infrastructure as indicated in this policy,
 - c) determine who is responsible for the cost of installing the infrastructure as indicated in this policy,
 - d) establish the mechanism of any cost sharing, endeavor to assist, or other financial considerations,
2. The developer will be responsible for all costs except where otherwise indicated in this policy.

DEFINITIONS

Development Agreement: A contract entered into between the municipality and the developer in regards to the installation of municipal improvements, including all conditions that need to be adhered to.

GMIS: refers to the General Municipal Improvement Standards (engineering guidelines) for Mackenzie County

Off-site Levy: As defined in the Alberta Municipal Government Act

Rural Standard: Built up asphalt surfaced roads with ditches/swales, power, street lighting

Development Approval: Refers to a subdivision/development approval where the application process has been followed and an approval subsequently issued by the development authority.

Urban Standard: curb & gutter, sidewalk, underground power, metal light standards with underground servicing, asphalt road surfacing and storm sewer

Zoning: As per the Land Use Bylaw

FUNDING

Funding for municipal infrastructure improvements required to support a developer's approved Development will be provided by the developer. The County, within the Development Agreement, will provide assistance to the developer when oversizing is required to collect appropriate funds from benefitting lands when the benefitting lands are further developed.

When the County constructs municipal improvements in advance of developments the County will, through the use of an Off-site Levy bylaw(s) collect apportioned costs as assigned to benefitting lands.

The County may consider providing a portion of the funding when oversizing is required, however this will be subject to negotiation and Council approval. Funding in these situations may also be recouped by way of a local improvement bylaw.

Where a development requires that an arterial road be constructed, the County shall only consider to cover the costs of upgrading the road from collector to arterial standard, and shall, whenever possible, utilize the mechanisms provided for by Off-site Levy or local improvement bylaw(s) to recover those costs.

URBAN DEVELOPMENT STANDARDS

The following chart indicates the minimum standards on new development:

Zoning Standards Chart

Road Classification	Zoning					
	Residential		Commercial		Industrial	
	HR, MHC, MHS	HCR	HCC1, HC2, TC1	HC1, GC1	HI1, LG1	HI2
Arterial Hamlet 40 m min ROW width	urban or rural standard* sidewalk u/g power	urban or rural standard* sidewalk u/g power	urban or rural standard* sidewalk u/g power	urban or rural standard* sidewalk u/g power	urban or rural standard* sidewalk u/g power	urban or rural standard* sidewalk u/g power
Collector Hamlet 26 m min ROW width	urban standard	rural standard sidewalk u/g power	urban standard	urban or rural standard* sidewalk u/g power	rural standard sidewalk o/h power	rural standard o/h power
Local Hamlet 20 m min ROW width	urban standard	rural standard u/g power	urban standard	urban or rural standard* sidewalk u/g power	rural standard o/h power	rural standard o/h power
Core Hamlet 22 m min ROW width	urban standard	N/A	urban standard	N/A	N/A	N/A

* Denotes that the standard will be decided by evaluating anticipated traffic volumes, design speed, continuity with existing infrastructure and future proposed upgrades, and other criteria as deemed necessary.

UTILITIES

Power

New power installations shall ideally be underground. Industrial areas may be serviced by overhead power, but commercial and residential areas shall have underground servicing. Where infill development occurs, the development shall utilize the existing standard that services the area.

In residential and commercial areas, overhead servicing will only be considered where the developer has provided verification that underground installation is not viable, considering continuity with existing power supply, lot sizes and anticipated use, and other criteria as deemed necessary.

All overhead power servicing shall utilize the utility rights-of-way and be located behind the lots. Road crossings, especially in industrial areas, shall be designed to permit over size loads to safely traverse.

Lighting

Street lighting shall be installed in all new developments as per the Illuminating Engineering Society and Road and Transportation Association of Canada criteria. Street lighting shall ideally utilize steel light standards, but in areas developed to a rural standard, wood standards may be allowed.

Overall continuity, esthetic, maintenance costs, and likelihood of redevelopment requiring relocation of light standards shall all be considered when determining if wood or steel standards are required.

Natural Gas

Gas servicing shall be provided to new developments. Installation shall be in keeping with the utility providers current standard practice.

Depending on the location within the County, the developer may be required to install gas servicing as part of the improvements, in other areas the utility provider will independently install gas servicing as building development occurs.

Phone/Data

Phone and/or data infrastructure shall be provided for all developments, to the specifications of the local telecommunications provider.

Installation of higher grade infrastructure is encouraged in order to provide telecommunications providers with better options for providing digital data to the community.

Storm Sewer

Design criteria shall be in keeping with the County's GMIS.

Storm drainage shall be provided for all developments. The general level of service required by the County in regard to storm water management shall be in keeping with the dual drainage concept utilizing major and minor collection systems.

All urban standard development shall include an integrated surface and underground (major and minor) storm sewer system. All rural standard developments are anticipated to primarily use a surface drainage (major) system to manage storm water, however integration with an underground (minor) system may be required by the County.

Storm water retention ponds shall be constructed in accordance with design criteria established in the GMIS to reduce the downstream effects of the development. Ponds shall be constructed to service large areas, and be thoughtfully integrated with the

subdivision design. All new developments shall create zero net change to the existing storm sewer peak flows. The County retains the ability to alter storm pond placement.

Sanitary Sewer

Design criteria will be in keeping with Mackenzie County's GMIS.

Sanitary sewer shall be provided for all developments.

In areas that are to be developed as row housing or condominiums, each proposed unit shall receive a separate service from the main line.

In areas that are zoned for either low or medium density development, but at time of land development the future build out is undetermined, sewer servicing shall be upsized to ensure adequate capacity (eg. 5" service to be installed to property line).

Sanitary sewer installations shall be gravity based. Where for multiple reasons a gravity system is not economical in an area, a detailed engineering report shall be provided to the County explaining the challenges, and how a low pressure system will help to alleviate the challenges. The report shall include details regarding site density, soil types, water tables, existing development, terrain, economics and any other factors that are perceived as a hindrance to installing a gravity system.

Water

Design criteria will be in keeping with Mackenzie County's GMIS.

All new developments shall include the installation of municipal water which shall provide adequate fire flow volumes.

In areas that are to be developed as row housing or condominiums, each proposed unit shall receive a separate service from the main line.

In areas that are zoned for either low or medium density development, but at time of land development the future build out is undetermined, water servicing shall be upsized to ensure adequate capacity (eg. 1 ½" service to be installed to property line).

Private Servicing

For all high density or large lot development with multiple buildings serviced from an internal network, an isolation valve shall be provided at the property line. All internal underground servicing shall be engineered to meet AESRD, "Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems", and a copy of the engineered drawings shall be provided to the County for review before installation.

All private hydrants and valves shall be properly maintained to municipal standards. Preventative maintenance shall be performed annually, with records provided to the County Utilities department. Alternately, the Utilities department may be contracted to perform the preventative maintenance.

ROADS AND ROAD EDGE

Design criteria will be in keeping with Mackenzie County's GMIS.

All new roads constructed within hamlets shall be asphalt surfaced. Paving may be delayed until such time as there are additional paving projects in the area in order to save on cost and increase the project viability. In such cases of pavement delay the road base may require additional work prior to pavement application.

Arterial

Arterial roads shall be located as required to facilitate the efficient movement of vehicles and goods into and around a community. They shall typically be placed a minimum of 800 m apart, and shall primarily only be intersected every 300 m to 400 m by collector roads.

Where existing private properties already access directly onto an arterial road, sufficient traffic lanes must be provided to ensure a consistent traffic flow. Where possible, shared driveways and/or service roads shall be utilized in order to concentrate the turning movements of traffic.

Approach locations shall be well defined in order to help delineate where to expect traffic turning. Developments along arterial roads shall have parking areas of sufficient size so as to eliminate the need for traffic backing onto the roadway when leaving a property.

Driveways onto private properties shall be minimized, as moving traffic and goods are the primary priorities. Turning lanes shall be utilized to help maintain the flow of traffic with minimal disturbances.

It is anticipated that traffic signalization will be required where arterial roads intersect, and potentially where collector roads intersect with arterial. Traffic studies and signalization warrant reports shall be conducted for all such intersections, as deemed necessary by the County.

Conventional grass swales (ditches) may be utilized along arterial roads, but ditch slopes shall be a minimum of 4:1 to facilitate maintenance and esthetics. Where drainage swales may become too deep, grass swales shall be paired with a perforated pipe system under the swale. This reduces the width of ROW needed to facilitate the drainage, and improves esthetics, traffic safety and pedestrian walkability.

Arterial roads should not allow for any on street parking

Drought and salt tolerant deciduous trees shall be planted between the curb and sidewalk, to provide shade, provide protection, and help define the pedestrian space. It

is strongly encouraged to plant additional trees behind the sidewalk, on private property, in order to avoid conflicts with underground utilities.

Collector

Collector roads shall typically be spaced about 300 m to 400 m apart, with intersections onto arterial roads at the same intervals in order to facilitate efficient traffic movement. When deciding on collector road location, adjacent land uses and existing and proposed arterial and collector road locations shall be considered.

Hamlet collector roads constructed to a rural standard shall utilize grassy swales integrated with a perforated pipe system (bioswales). Conventional ditches shall be discouraged as part of any new hamlet development, unless appropriate rationale is provided. Appropriate rationale shall include a brief engineering report detailing why conventional ditches are the best choice for the community, and shall include items such as esthetics, maintenance and lifespan.

When possible, locate buildings which are likely to draw high amounts of traffic to property that has direct access to an arterial road.

In residential and commercial areas, buildings shall be located near the minimum setbacks from the street in order to provide a consistent frontage and improved esthetics. Parking shall ideally be located at the side or rear of commercial buildings.

Drought and salt tolerant deciduous trees shall be planted between the curb and sidewalk (if not monolithic), to provide shade, provide protection, and help define the pedestrian space. It is strongly encouraged to plant additional trees behind the sidewalk, on private property. Trees shall be located as to avoid conflicts with underground utilities.

Use curb bump-outs to help delineate parking lanes, and to prevent them from being used for through traffic.

Roundabouts are encouraged at intersections that are anticipated to see high traffic volumes but where signalization is not warranted. These are also effective at calming traffic and limiting speed while maintaining a consistent traffic flow. Consideration shall be given to ensure that sight lines are not negatively impacted at other intersections or onto private driveways.

Local

Local roads shall constitute the majority of roads within the communities. Their objective is to provide access to each individual property, and the primary purpose is to facilitate slow moving traffic frequently interrupted by vehicle turning movements and pedestrians.

On street parking is a staple feature of local roads in residential and commercial areas. Local roads constructed to a rural standard shall utilize bioswales for storm water catchment.

In commercial and residential areas buildings shall be located at the minimum setbacks from the street in order to provide a consistent frontage and improved esthetics. Parking shall ideally be located at the side or rear of commercial buildings.

Drought and salt tolerant deciduous trees shall be planted to provide shade and help define the pedestrian space. Trees shall be located as to avoid conflicts with underground utilities.

Core Hamlet

Roadways shall be designed to allow adequate movement of vehicular traffic with access to both on street parking and private parking. Pedestrian movement is a key consideration when considering streets within the Core district.

All curbs shall be straight faced with clearly defined driveway locations. Crosswalks shall be clearly marked, and may be located mid-block to help facilitate safe and efficient pedestrian movement.

Sidewalks shall be located on both sides of all streets, and be a minimum of 3 m in width in the Core area to help facilitate higher pedestrian volumes and encourage pedestrian traffic.

Deciduous trees shall be planted within or behind the sidewalks to provide shade, provide safety and to help delineate the pedestrian space. Property owners shall be strongly encouraged to plant trees on their properties to help create the sense of place and to ensure the Core is visually appealing and attracts pedestrian traffic.

Whenever possible, buildings, streets and sidewalks shall be oriented in a manner that capitalizes on sun exposure and slows winds from prevailing directions.

Sidewalks

Sidewalk grades shall be minimally impacted by driveways. The sidewalk surfacing material shall be continuous across the crossing.

In locations of high pedestrian traffic, create visually distinct markings (eg. colored pavement, zebra stripes) on the driving surface to delineate the pedestrian crossing locations.

Utilize curb bump-outs to reduce the length of crosswalks, prevent parking near intersections, and increase safety by eliminating the parking lanes as through traffic lanes.

Sidewalks shall be located in all areas where even moderate levels of pedestrian traffic are anticipated.

Sidewalks shall be located along both sides of arterial roads, both sides of collector roads where high traffic volumes are anticipated, and on one side along low volume collectors and local roads. Refer to the Zoning Standards Chart for additional information regarding the requirements for sidewalks.

Greenlink corridors shall have a sidewalk and an asphalt path, on opposite sides of the road ROW. This same standard shall be applied to arterial and high volume collector roads.

Where sidewalks are required along roads constructed to Rural Standard, the sidewalk shall be either 1.5 m wide concrete or 2.4 m wide asphalt.

Private Roads

Private streets shall be constructed to an appropriate comparable municipal standard as if it were a public road. This applies to developments such as Manufactured Home Parks and commercial developments with multiple tenants on a common property.

HAMLET REDEVELOPMENT

Design criteria will be in keeping with Mackenzie County's GMIS.

Redevelopment Standards

For all areas being redeveloped, the goal is to improve the infrastructure to match the criteria for new development of the same zoning. This will not always be possible because of the existing right-of-way widths and adjoining development.

Whenever a redevelopment is proposed and there are existing restrictions (eg. ROW widths), a brief engineering report shall be prepared outlining the long term benefits of working around the obstacles, or removing the obstacles and meeting the criteria of a new build.

This report shall include but shall not be limited to:

- short and long term cost analysis
- future traffic (vehicular and pedestrian) flow implications
- potential safety compromises (lane widths and sight distances)
- esthetic impact
- all other relevant information.

Consideration shall always be provided to account for continuity and additional future plans. If the esthetic of a neighborhood is to be maintained, careful consideration shall be given when upgrading a street to maintain the current esthetic. Careful transitioning from curb and gutter roads to roads with a detached sidewalk and bioswales may be necessary to match the esthetic of a neighborhood without negatively impacting the

overall esthetic along the roadway, or the pedestrian and vehicular traffic capabilities along the street.

Upgrading Priorities

When considering road upgrades with Hamlets, the County shall prioritize roads in the following order:

1. Arterial
2. Core
3. Collector
4. Local

See Appendix A for a map depicting road upgrades identified on a priority basis utilizing the above priority ranking.

Appendix A shall be reviewed annually by administration and further reviewed and approved by Council. This shall be utilized for budgeting purposes and growth considerations.

Funding

When upgrades to heavy commercial/industrial areas are warranted, the costs of asphalt and street lighting shall be split evenly between the County and property owners adjacent to the improvement area. The County will create local improvement bylaws to recoup the landowner costs.

LEAP FROG DEVELOPMENT

When a developer chooses to develop in an area that is not easily serviced by existing municipal infrastructure and where significant amounts of the newly installed infrastructure will remain underutilized at full build out of the proposed development, the developer shall upfront all costs of the installation of municipal infrastructure, including oversizing to provide future servicing of adjacent undeveloped lands.

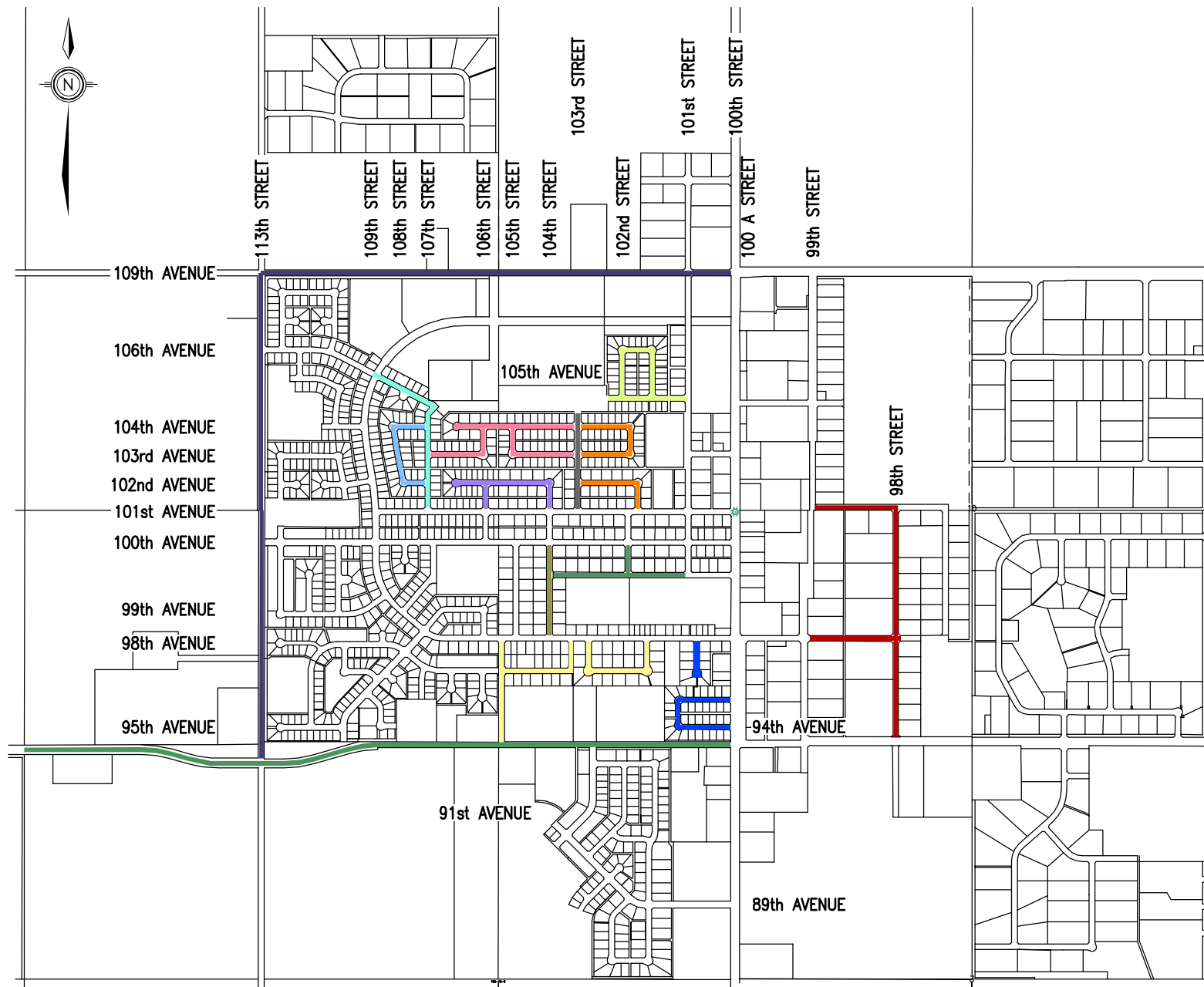
The County will endeavor to assist in the recovery of these costs from other benefitting lands at the time of the future developments primarily by way of issuing and collecting offsite levies but may also utilize different available tools.

	Date	Resolution Number
Approved	18-Jun-02	02-460
Amended	13-Jan-04	04-009
Amended	23-Jun-04	04-510
Amended	10-May-05	05-255
Amended	13-Dec-05	05-674
Amended	26-Mar-09	09-03-227

Amended	13-Oct-10	10-10-855
Amended	23-Feb-11	11-02-199
Amended	11-Feb-14	14-02-072
Amended	30-Jan-15	15-01-053

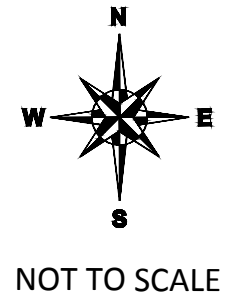
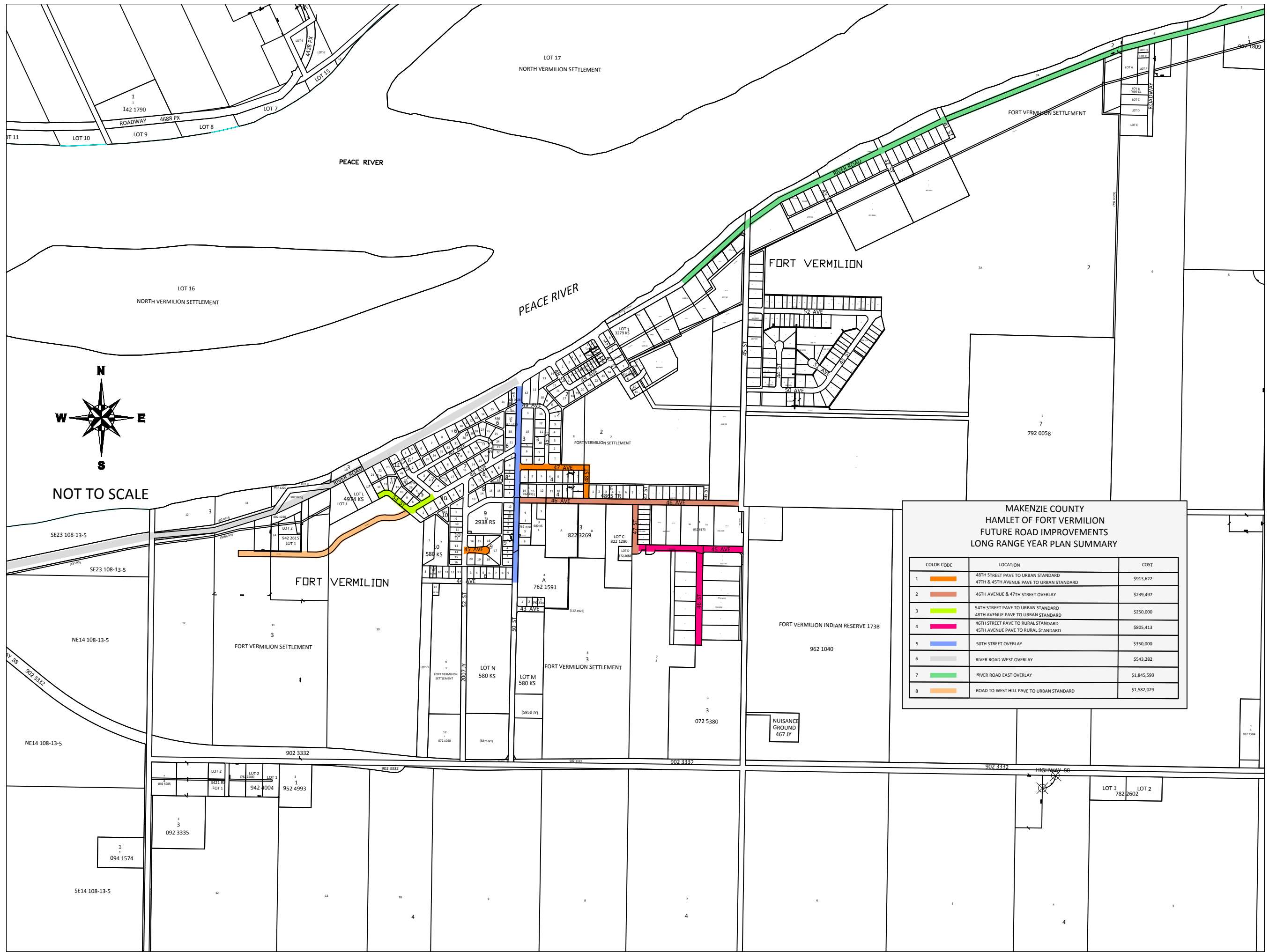
Appendix A

Hamlet road improvement maps



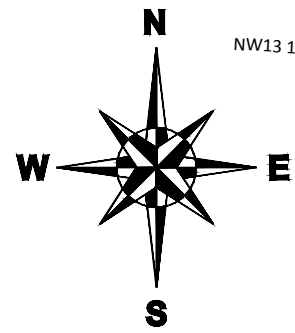
MACKENZIE COUNTY
 HAMLET OF LA CRETE
 FUTURE ROAD IMPROVEMENTS
 LONG RANGE PLAN SUMMARY

COLOUR CODE	LOCATION	COST
1	94th Avenue Recap	\$645,000
	94th Avenue West of 113th Street Base & Paving	\$945,000
	99th Avenue Paving to Urban Standard	\$1,480,000
	Traffic Lights	\$200,000
2	104th Street Pave to Rural Standard	\$360,000
3	95th & 96th Avenue Pave to Urban Standard	\$1,260,000
	101st Street Pave to Urban Standard	\$320,000
4	106th Street Pave to Urban Standard	\$920,000
	97th Avenue Pave to Urban Standard	\$2,060,000
5	109th Avenue Base & Paving to Rural Standard	\$1,900,000
	113th Street Base & Paving to Rural Standard	\$1,900,000
6	103rd Street Pave to Urban Standard	\$890,000
7	107th Street & 106th Avenue Pave to Urban Standard	\$1,600,000
8	102nd, 103rd, & 104th Avenue Pave to Rural Standard	\$850,000
9	102nd Avenue Pave to Rural Standard	\$600,000
10	103rd & 104th Avenue Pave to Rural Standard	\$1,160,000
11	108th Street Pave to Rural Standard	\$450,000
12	105th & 106th Avenue Pave to Rural Standard	\$840,000
13	98th Street Base & Paving to Rural Standard	\$1,740,000
	TOTAL=	\$20,120,000



**MAKENZIE COUNTY
HAMLET OF FORT VERMILION
FUTURE ROAD IMPROVEMENTS
LONG RANGE YEAR PLAN SUMMARY**









COLOR CODE	LOCATION	COST
1	48TH STREET PAVE TO URBAN STANDARD 47TH & 45TH AVENUE PAVE TO URBAN STANDARD	\$913,622
2	46TH AVENUE & 47TH STREET OVERLAY	\$239,497
3	54TH STREET PAVE TO URBAN STANDARD 48TH AVENUE PAVE TO URBAN STANDARD	\$250,000
4	46TH STREET PAVE TO RURAL STANDARD 45TH AVENUE PAVE TO RURAL STANDARD	\$805,413
5	50TH STREET OVERLAY	\$350,000
6	RIVER ROAD WEST OVERLAY	\$543,282
7	RIVER ROAD EAST OVERLAY	\$1,845,590
8	ROAD TO WEST HILL PAVE TO URBAN STANDARD	\$1,582,029

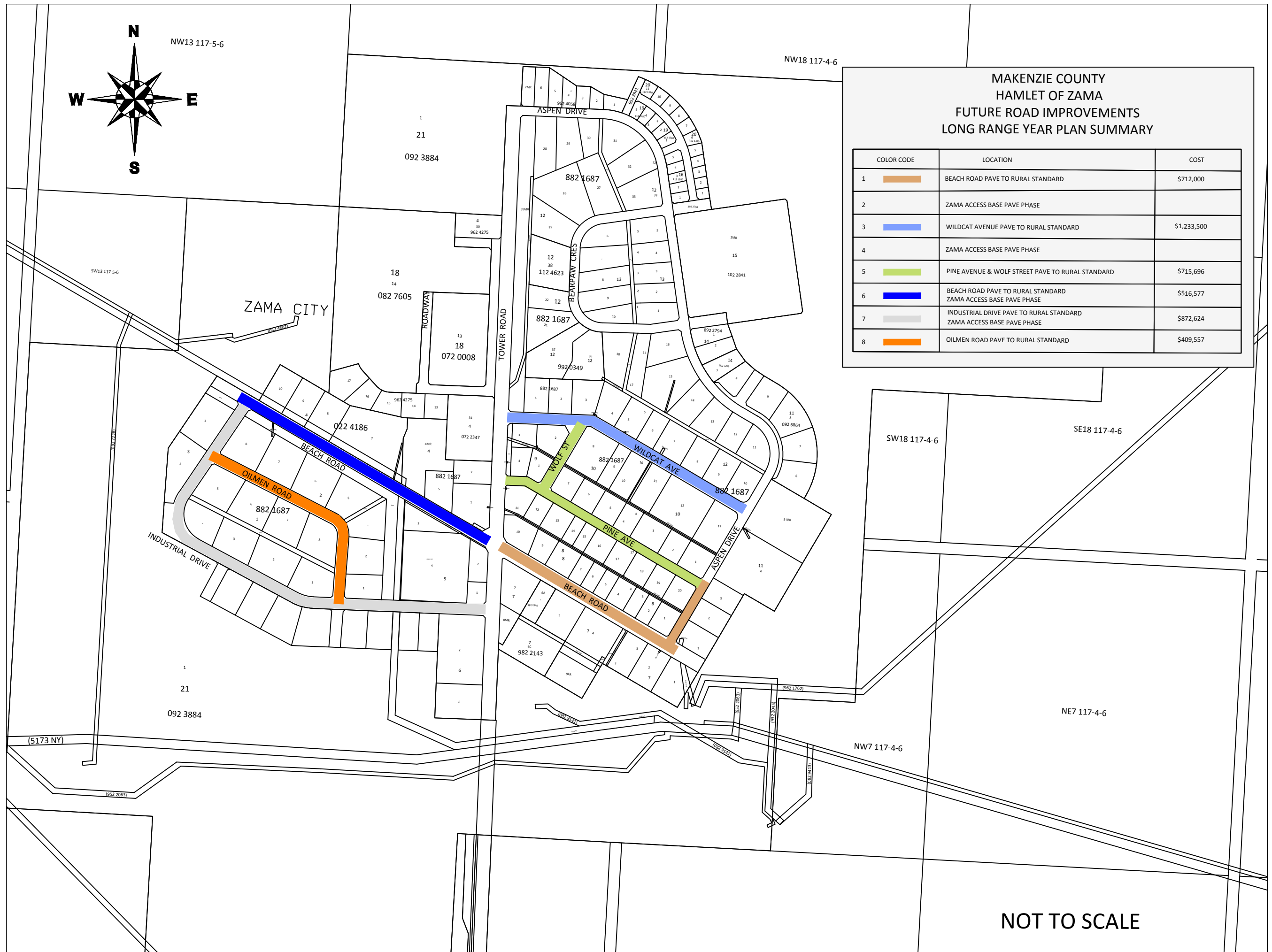


NW13 117-5-6

NW18 117-4-6

**MAKENZIE COUNTY
HAMLET OF ZAMA
FUTURE ROAD IMPROVEMENTS
LONG RANGE YEAR PLAN SUMMARY**

COLOR CODE	LOCATION	COST
1 	BEACH ROAD PAVE TO RURAL STANDARD	\$712,000
2 	ZAMA ACCESS BASE PAVE PHASE	
3 	WILDCAT AVENUE PAVE TO RURAL STANDARD	\$1,233,500
4 	ZAMA ACCESS BASE PAVE PHASE	
5 	PINE AVENUE & WOLF STREET PAVE TO RURAL STANDARD	\$715,696
6 	BEACH ROAD PAVE TO RURAL STANDARD ZAMA ACCESS BASE PAVE PHASE	\$516,577
7 	INDUSTRIAL DRIVE PAVE TO RURAL STANDARD ZAMA ACCESS BASE PAVE PHASE	\$872,624
8 	OILMEN ROAD PAVE TO RURAL STANDARD	\$409,557



NOT TO SCALE