

THE CITY OF BLOOMFIELD HILLS

ROAD IMPROVEMENT PROGRAM



PROGRAM DESCRIPTION

ROAD IMPROVEMENT PRIORITY

RANKING and RELATED UTILITY NEEDS

2010-2012 PROGRAM UPDATE

CITY OF BLOOMFIELD HILLS
ROAD IMPROVEMENT PROGRAM

PROGRAM DESCRIPTION

The City of Bloomfield Hills has approximately 33 miles of roads, including 5 miles of gravel roads, under its jurisdiction. The City is responsible for the maintenance of these roads, removing snow, and replacing the roads (in kind) when their condition warrants. The City Commission shares the interests of our residents and local business owners in a comprehensive improvement of our roadway system.

Starting in 2007, the City of Bloomfield Hills began a significant annual road improvement program. The intent of this program is to rehabilitate paved roads, pave gravel roads (where appropriate), and make other necessary improvements within the public road rights of way. Critical to this program is addressing other utility (i.e. water, sanitary sewer, public storm sewer, etc.) issues within the public road rights of way and repairing all bridges and culvert crossings in accordance with current safety protocols before, or concurrent with, the road projects to avoid costly project overlaps and redundant inconveniences to the adjacent citizens.

The City intends on funding this initiative through the use of existing State Gas Tax revenues, selling dedicated road improvement bonds, using available (albeit limited) funding from Oakland County, and maintaining the same level of general fund contributions when budgeting permits. The City anticipates spending approximately \$10 million on road work, from 2007 to 2016, with little, to no, impact on the City's projected tax rate. Related water and sanitary sewer work will be funded through the City's restricted Water and Sewer Funds.

It is the City's desire to pave as many gravel roads as possible on a timely schedule based on resident support. Gravel roads are increasingly more expensive and difficult to maintain. Historically, residents on gravel roads who desire to have their roads paved have been asked to circulate a Special Assessment petition under the provisions of the City Charter. The Special Assessment petition indicates their wish to have the road paved and their agreement to have the costs associated with such projects assessed to all benefiting property owners. To advance the City's objectives and considering the potential maintenance savings associated with paved verses

gravel roads, the City is willing to contribute funds to the project costs; in addition to designating any Oakland County funding that may be eligible for portions of these projects. All remaining costs will be special assessed and therefore paid by the benefiting property owners. The City will prepare gravel road paving project proposals when requested by a majority of the property owners for those gravel roads that are adjacent to paved roads slated for rehabilitation.

In 2006 and again in 2008, the City participated in a Road Condition survey that was completed by the Road Commission for Oakland County except for the recently rehabilitation roads. Each of the City's roads, except those recently reconstructed, was evaluated for pavement quality, ride comfort, and surface distress and assigned a point value. Based on the 2008 Road Condition Survey, the City's roads had an average Pavement Quality Index of 5.5 compared to Oakland County paved roads which had an average Pavement Quality Index of 6.5. This indicates that the overall the quality of the roads in the City is less than the average quality of the paved RCOC roads. However, the City's average would have been better (higher) if the recently rehabilitated roads were included. Taking this into account, the City's roadway system appears to be of similar quality to those in the Oakland County System.

The City utilized the current road inventory to assist with the selection of the roads that are to be rehabilitated in the upcoming program. This accounting of the City's roads includes the current road conditions, design and construction constraints, road surface index, and priority ranking. To determine which roads will be rehabilitated each year, the highest priority ranking group will be:

- identified as requiring improvements to bridges and large culverts,
- cross referenced to known utility improvements,
- investigated for potential utility needs,
- organized geographically,
- separated by scope of work (i.e. minor rehab, major repairs, complete replacement),
- compared to known County and State projects in the area,
- checked against the ranking of adjacent streets,
- coordinated with gravel road paving projects,
- sequenced to provide the best possible access for the residents, and
- evaluated against available funding sources.

The selection criteria will help the City proceed in an organized manner and to avoid project duplication, unnecessary disruption of traffic, multiple impacts to residents, and damage to new roads during subsequent utility work or nearby paving projects. Most importantly, selecting road projects in this manner will yield efficiencies in our overall program and save the City money.

Generally, roads will continue to be evaluated and selected in the summer of each year if changes to the overall plan are warranted. Surveying and engineering will occur through the late fall and early winter months for bidding in the early spring. Construction will take place each summer. Each year this report will be updated and the process repeated. Public input is needed and encouraged. Public Information meetings will be held several times throughout this program. The following sections of this plan contain the overall road improvement priority ranking, related utility needs, and a detailed discussion of the upcoming Project List as recommended.

PAVED ROAD IMPROVEMENT CONDITION AND PRIORITY

Street Name	Road Length (ft)	PQI	RCI	SDI	Project Scope	DPW/HRC Adjustment Factor	Deterioration Factor	Estimated Costs (2009)	Road Condition Index	Priority Ranking
Orchard Ridge Road N	3,700	3.2	4.7	3.8	Repair	-3.0	-1.0	\$ 647,500	7.7	1
Lone Pine Road E	3,450	3.3	5.3	3.8	Repair	-3.0	-1.0	\$ 603,750	8.4	2
Chestnut Drive	1,200	3.1	4.5	3.7	Repair	0.0	-2.0	\$ 210,000	9.3	3
Chestnut Circle (Ct)	1,725	4.4	4.2	5.3	Rehab	-3.0	-1.0	\$ 172,500	9.9	4
Conge Drive	530	3.4	4.6	4.1	Repair	0.0	-2.0	\$ 92,750	10.1	5
Epping Lane	930	3.2	4.1	3.9	Repair	0.0	-1.0	\$ 162,750	10.2	6
Woodwind Drive	1,750	3.3	4.6	3.9	Repair	0.0	-1.0	\$ 306,250	10.8	7
Nantucket Drive	1,640	3.3	4.5	4.0	Repair	0.0	-1.0	\$ 287,000	10.8	8
Yarboro Drive	1,720	3.4	4.5	4.0	Repair	0.0	-1.0	\$ 301,000	10.9	9
Whysall Lane	1,700	3.6	4.0	4.4	Repair	0.0	-1.0	\$ 297,500	10.9	10
Cranbrook Court	1,375	3.4	4.8	4.0	Repair	0.0	-1.0	\$ 240,625	11.2	11
Linda Court	265	3.6	4.2	4.4	Repair	0.0	-1.0	\$ 46,375	11.2	12
Vaughan Road	6,220	3.5	4.9	4.1	Repair	0.0	-1.0	\$ 1,088,500	11.5	13
Linda Knoll	410	3.5	4.9	4.1	Repair	0.0	-1.0	\$ 71,750	11.5	14
Kensington Road S	4,830	4.6	5.7	5.3	Rehab	-3.0	-1.0	\$ 483,000	11.6	15
Merrimac Court	475	4.3	4.3	5.2	Repair	0.0	-2.0	\$ 83,125	11.8	16
Cranbrook Road N	3,750	5.1	4.9	6.0	Rehab	-3.0	-1.0	\$ 375,000	12.0	17
Bennington Drive	1,900	4.2	4.2	5.1	Rehab	0.0	-1.0	\$ 190,000	12.6	18
Harlan Drive	1,500	4.1	4.7	4.9	Rehab	0.0	-1.0	\$ 150,000	12.7	19
Hunters Crossing	825	4.3	5.5	5.0	Rehab	0.0	-2.0	\$ 82,500	12.8	20
Linda Lane	1,300	4.2	4.7	5.0	Rehab	0.0	-1.0	\$ 130,000	13.0	21
Canterbury Crescent	1,120	4.7	3.4	5.9	Rehab	0.0	-1.0	\$ 112,000	13.0	22
Hunt Club Drive	2,350	4.1	5.2	4.7	Rehab	0.0	-1.0	\$ 235,000	13.1	23
Martell Road (Ct)	3,390	4.5	4.4	5.4	Rehab	0.0	-1.0	\$ 339,000	13.3	24
Pine Gate Drive	1,100	4.5	4.4	5.5	Rehab	0.0	-1.0	\$ 110,000	13.4	25
Rudgate Road	2,650	4.0	4.6	4.8	Rehab	0.0	0.0	\$ 265,000	13.4	26
Woodridge Road	1,200	4.7	4.1	5.7	Rehab	0.0	-1.0	\$ 120,000	13.5	27
Cranbrook Road S	2,900	5.4	4.6	6.5	Rehab	-3.0	0.0	\$ 290,000	13.5	28
Hunters Pond	475	4.7	4.4	5.6	Rehab	0.0	-1.0	\$ 47,500	13.7	29
Cabot Place	640	5.0	5.4	5.8	Rehab	0.0	-2.0	\$ 64,000	14.2	30

Street Name	Road Length (ft)	PQI	RCI	SDI	Project Scope	DPW/HRC Adjustment Factor	Deterioration Factor	Estimated Costs (2009)	Road Condition Index	Priority Ranking
Sebago Lane	500	4.9	4.1	6.0	Rehab	0.0	0.0	\$ 50,000	15.0	31
Hickory Grove Road E	2,580	4.9	5.7	5.6	Rehab	0.0	-1.0	\$ 258,000	15.1	32
Manorwood Drive	1,900	4.9	4.9	5.7	Rehab	0.0	0.0	\$ 190,000	15.5	33
Hickory Grove Road W	2,215	4.9	4.9	5.8	Rehab	0.0	0.0	\$ 221,500	15.6	34
Dunston Road (Ct)	3,600	5.6	4.5	6.7	Rehab	0.0	0.0	\$ 360,000	16.8	35
Orchard Ridge Road S	2,800	5.7	5.6	6.6	Rehab	0.0	-1.0	\$ 280,000	16.9	36
Lone Pine Road W	5,785	6.8	5.6	7.8	Rehab	-3.0	0.0	\$ 578,500	17.1	37
Westview Road	780	6.0	6.4	6.7	Rehab	0.0	-2.0	\$ 78,000	17.1	38
Chesterfield Road	3,100	5.9	5.5	6.8	Rehab	0.0	-1.0	\$ 310,000	17.2	39
Warrington Road	1,560	6.1	5.6	6.9	Rehab	0.0	-1.0	\$ 156,000	17.7	40
Goodhue Road	820	6.0	4.7	7.0	Rehab	0.0	0.0	\$ 82,000	17.8	41
Rathmor Road	3,745	5.8	5.5	6.7	Rehab	0.0	0.0	\$ 374,500	18.0	42
West Valley Road	2,165	5.9	5.5	6.8	Rehab	0.0	0.0	\$ 216,500	18.2	43
Quarton Lane	660	6.3	5.8	7.1	Rehab	0.0	-1.0	\$ 66,000	18.2	44
Kensington Road N	4,300	5.8	6.0	6.5	Rehab	0.0	0.0	\$ 430,000	18.3	45
Renton Court	315	6.4	4.4	7.7	Rehab	0.0	0.0	\$ 31,500	18.5	46
Marblehead Drive	1,600	6.1	6.0	6.9	Rehab	0.0	0.0	\$ 160,000	19.0	47
Falmouth Drive	1,950	6.5	4.9	7.7	Rehab	0.0	0.0	\$ 195,000	19.2	48
Thetford Lane	780	6.5	5.2	7.5	Rehab	0.0	0.0	\$ 78,000	19.2	49
Joyce Court	300	6.7	4.7	7.9	Rehab	0.0	0.0	\$ 30,000	19.3	50
Kingsley Trail (Ct)	3,895	6.6	6.6	7.2	Rehab	0.0	-1.0	\$ 389,500	19.4	51
Kennebec Court	850	6.5	5.6	7.4	Rehab	0.0	0.0	\$ 85,000	19.5	52
Lowell Court	1,700	6.9	5.9	7.8	Rehab	0.0	-1.0	\$ 170,000	19.6	53
Hilltop Lane	410	7.1	4.7	8.4	Rehab	0.0	0.0	\$ 41,000	20.2	54
Haverhill Road	1,860	7.6	5.5	8.7	Rehab	0.0	0.0	\$ 186,000	21.8	55
Opdyke Road	3,600	7.3	6.7	8.1	Rehab	0.0	0.0	\$ 360,000	22.1	56
Balfour Drive	875	7.9	5.2	9.2	Rehab	0.0	0.0	\$ 87,500	22.3	57
Parkman Drive	825	7.8	5.9	8.8	Rehab	0.0	0.0	\$ 82,500	22.5	58
Pine Ridge Drive	3,150	8.0	5.6	9.1	Rehab	0.0	0.0	\$ 315,000	22.6	59
Beresford Court	490	8.0	5.6	9.1	Rehab	0.0	0.0	\$ 49,000	22.7	60
Lahser Road N	5,325	7.7	6.9	8.4	Rehab	0.0	0.0	\$ 532,500	22.9	61

Street Name	Road Length (ft)	PQI	RCI	SDI	Project Scope	DPW/HRC Adjustment Factor	Deterioration Factor	Estimated Costs (2009)	Road Condition Index	Priority Ranking
Lakewood Drive	1,660	8.2	5.5	9.4	Rehab	0.0	0.0	\$ 166,000	23.1	62
Endicott Road	1,180	8.3	5.4	9.6	Rehab	0.0	0.0	\$ 118,000	23.3	63
Woodberry Drive	1,700	8.5	6.0	9.6	Rehab	0.0	0.0	\$ 170,000	24.2	64
Willow Glen Court	260	8.7	6.5	9.6	Rehab	0.0	0.0	\$ 26,000	24.8	65
Randall Lane	665	9.1	8.1	9.6	Rehab	0.0	-1.0	\$ 66,500	25.8	66
Whitehall Road	1,860	9.2	8.6	9.5	Rehab	0.0	0.0	\$ 186,000	27.3	67
Lakeview Court	320				Complete					
Hillwood Drive (Ct)	2,900				Complete					
Charing Cross Court	880				Complete					
Church Road	1,170				Complete					
Hammond Court	1,200				Complete					
Edgemere Court	660				Complete					
Lone Pine Hill	1,375				Complete					
Bloomfield Hills Pkwy	3,150				Complete					
Barden Road	4,875				Complete**					
Guilford Road	2,750				Complete**					
Keswick Road	1,150				Complete**					
Averages	1,913	5.5	5.2	6.4					16.2	

Notes:

PQI - Pavement Quality Index

RCI - Ride Comfort Index

SDI - Surface Distress Index

Replace - The complete removal and replacement of the roadway (\$300/ft)

Repair - Remove and replace fully deteriorated road sections and resurface remaining areas (\$175/ft)

Rehab - Resurface/overlay roadway only (\$100/ft)

* Estimated costs were increased 5% to reflect inflation from 2009 costs.

** Project to be completed in 2009

Adjustments due to underlying conditions, road surface inspection issues with concrete roads, project scope, drainage improvements, etc.

Ranking based on 1) Road Condition Index then 2) PQI

The Recommended 2010-2012 Road Improvement Program roads are shaded.

GRAVEL ROAD PAVING PROJECTS

Group ID	Street	Length (ft)	Current Condition	Est. Costs (2009)
1	Burnham Road	2350	Poor	\$ 528,750
	Eton Cross Road	1600	Poor	\$ 360,000
	Trowbridge Road	3475	Fair	\$ 781,875
	Canterbury Road	1325	Fair	\$ 298,125
2	Brady Lane	2275	Fair	\$ 511,875
3	Wishbone Drive	1880	Fair	\$ 423,000
4	Longmeadow Drive	485	Fair	\$ 109,125
5	Pembroke	2550	Fair	\$ 573,750
	Country Club Drive	2790	Fair	\$ 627,750
6	Ridgewood Road	1580	Fair	\$ 355,500
	Hillcrest Drive	1070	Fair	\$ 240,750
7	East Valley Road	1150	Fair	\$ 258,750
2009 Program	Guilford Road	1200		
2009 Program	Denbar Lane	540		
Abandoned	Oak Knob Road ***	885		
Costs based on \$225/lft				

TOTAL COSTS

The total City roadway improvement needs are \$18,000,000 to \$22,000,000 in 2009 construction costs.

WATER SYSTEM IMPROVEMENTS

Facility Improvements

- Square Lake and Lahser
- Orchard Ridge and Ridgewood
- Woodward and Long Lake

Water Main Extensions

- Lahser Road from Quarton to Ridgewood, including Falmouth extension and possibly a connection to Kennebec Court (completed in 2007)
- Quarton or Woodberry (Lowell Ct, Chesterfield) from Quarton to Cranbrook (to be completed in 2009)

Minor System Improvements

- Pembroke and Country Club (completed in 2007)

New Pressure Regulators

- Vaughan, Barden, and Long Lake Intersection (completed in 2009)

New Supply Connection

- Quarton and Chesterfield (completed in 2009)

Upsize Water Mains (as impacted)

- | | | |
|-------------------------|-------------------------|---------------------------------------|
| • Bennington | • Rudgate | • Kensington (South) |
| • Cabot Place | • Sebago Lane | • Kingsley Court |
| • Canterbury Crescent | • Thetford Lane | • Linda Knoll |
| • Church (2007) | • Woodridge | • Martell Court |
| • Epping Lane | • Yarboro | • Wishbone (North and South) (gravel) |
| • Falmouth | • Concord (pvt) | • Orchard Lane (pvt) |
| • Goodhue | • Conge | • Quarton near Cranbrook (2009) |
| • Guilford (2009) | • Denbar (2009) | • Surria Court |
| • Hammond Court (2007) | • Donningham Lane (pvt) | • Tiverton (pvt) |
| • Joyce Court | • Edgemere Court (2007) | • West Valley (gravel) |
| • Kennebec Court | • Eton Cross (gravel) | • Whitehall |
| • Lakeview Court (2007) | • Haverhill | • Wishbone Court (gravel) |
| • Linda Court | • Hillcrest (gravel) | • Dunston Court |
| • Merrimac Court | • Hunt Club | • Lone Pine |
| • Randall Lane | | |
| • Rathmor | | |

Construct Water Storage Facility

- TBD

Replace Aging Water Mains

- As needed

SANITARY SEWER SYSTEM IMPROVEMENTS

Sanitary Sewer Extensions

- Kensington Road from Trowbridge Court to City Limits

Repair Deteriorated Manholes

- As needed and located under Short Term Corrective Action Plan

Repair Deteriorated Mainline Sewers

- As needed and as found under Maintenance Services Contract

Replace Aging Sanitary Sewers

- As needed

BRIDGE/CULVERT INSPECTIONS AND REPAIRS

- See the HRC Report dated 04/24/08
- City bridges and large diameter culverts are in need of significant improvement

TRI-PARTY PROJECTS

Improve Existing “Y” Intersections

- Pembroke at Long Lake
- Country Club at Long Lake
- Vaughan and Barden at Long Lake (completed 2009)
- Longmeadow at Charing Cross

DRAINAGE PROJECTS

Repair and Replace Road Drainage Facilities

- As needed with road projects

Ditching

- As needed with road projects
- City DPW to complete as needed

2010-2012 UTILITY PROJECTS

The City of Bloomfield Hills is planning on the following utility improvements in 2010-2012:

Water Main Improvements

- As needed or determined due to on-going system evaluation

Repair Deteriorated Sanitary Manholes

- As needed and located under Short Term Corrective Action Plan

Repair Deteriorated Mainline Sanitary Sewers

- As needed and as found under Maintenance Services Contract

Upsize Water Mains (as impacted)

- On any roads to be replaced, repaired, or rehabilitated

2010-2012 ROAD IMPROVEMENT PROGRAM

The roads with the highest priority rankings were compared to the selection criteria listed in the Program Description and to the planned bridge/culvert and utility improvements above. The following roads were tentatively selected for the 2010-2012 Road Improvement Programs. The rationale for their selection is provided.

2010 ROAD IMPROVEMENT PROGRAM

Roads

- Lone Pine East
- Lone Pine West
- Cranbrook Court
- Linda Lane, Knoll, Court
- Cranbrook Road North

Bridges and Culverts

- Lone Pine Bridge (near Cranbrook)
- Cranbrook Road North Bridge
- Brady Lane Bridge
- Lone Pine Road Culvert
- Cranbrook Court Culvert

Utilities

- Water Main Replacement on Linda Lane, Knoll, Court
- Water Main Replacements on Lone Pine East and West
- Misc. Sanitary Sewer Rehabilitation

Recommended SAD

- Brady Lane

Discussion

- Bridge and culvert replacement or rehabilitation on Lone Pine and Cranbrook (N) Roads are the most critical public roadway need.
- Project addresses three (3) other priority bridge and culvert needs.
- Adjacent streets complete the Lone Pine corridor.
- Major roadway.
- High rankings.

Costs

- | | |
|-------------------------|------------------|
| • Road Improvement Fund | \$2,037,000 |
| • Culverts and Bridges | \$ 900,000 |
| • Water Fund | \$ 600,000 |
| • Sanitary Sewer Fund | \$ 80,000 |
| • <u>SAD</u> | <u>\$ 50,000</u> |

TOTAL ESTIMATED PROJECT COSTS - \$3,667,000

2011 ROAD IMPROVEMENT PROGRAM

Roads

- Orchard Ridge Road North
- Epping Lane
- Conge Drive

Bridges and Culverts

- Orchard Ridge Culvert

Utilities

- Water Main Replacement on Epping Lane
- Water Main Replacement on Conge Drive
- PRV Rehabilitation at Orchard Ridge and Ridgewood
- Misc. Sanitary Sewer Rehabilitation

Recommended SAD

- Ridgewood
- Country Club
- Pembroke

Discussion

- High rankings.
- Project addresses priority bridge and culvert needs.
- Adjacent streets complete subdivision.
- Completes Long Lake, Vaughan, Lahser area.

Costs

• Road Improvement Fund	\$ 903,000
• Culverts and Bridges	\$ 30,000
• Water Fund	\$ 450,000
• Sanitary Sewer Fund	\$ 80,000
• <u>SAD</u>	<u>\$ 200,000</u>

TOTAL ESTIMATED PROJECT COSTS - \$1,663,000

2012 ROAD IMPROVEMENT PROGRAM

Roads

- Chestnut Drive, Circle, Court
- Woodwind Drive
- Renton Court
- Manorwood Drive

Bridges and Culverts

- Hickory Grove Culvert

Utilities

- Misc. Water System Improvements
- Misc. Sanitary Sewer Rehabilitation

Recommended SAD

- None

Discussion

- Project addresses priority bridge and culvert needs.
- High rankings.
- Adjacent Streets complete subdivision.

Costs

• Road Improvement Fund	\$ 909,000
• Culverts and Bridges	\$ 50,000
• Water Fund	\$ 50,000
• Sanitary Sewer Fund	\$ 80,000
• <u>SAD</u>	<u>\$ 0</u>

TOTAL ESTIMATED PROJECT COSTS - \$1,089,000

Estimated Costs – 2010-2012 Program

Road Improvement Fund	\$3,849,000
Culverts and Bridges	\$ 980,000
SAD	\$ 250,000

Sub-Total Road Improvement BONDS \$5,079,000

Water Fund	\$1,100,000
Sanitary Sewer Fund	\$ 240,000

TOTAL ESTIMATED PROJECT COSTS - \$6,419,000

Budgeting and Potential Road Deferment

The largest unknown cost at this point is the extent of the Lone Pine and Cranbrook (N) Roads bridge and culvert repairs. Based on detailed estimates during design it may be necessary to defer some of the above mentioned roads. If cost estimates or bids are not substantially lower than identified above, the following roads/costs should be deferred until future road improvement programs, in order of recommended deferment:

1. SAD Contributions
2. Renton Court and Manorwood
3. Linda Lane, Knoll and Court
4. Cranbrook Road North
5. Conge Drive

* Estimated Savings - \$1,500,000 (\$1.2 M savings in the Road Improvement Bond fund)