

TOWNSHIP OF BYRAM

NEW JERSEY

MAILING ADDRESS:
10 Mansfield Drive
Stanhope, NJ 07874
Phone 973-347-2500
Fax 973-347-0502



WEBSITE ADDRESS:
www.byramtwp.org

TO: Township Council

FROM: Joseph W. Sabatini, Township Manager

DATE: January 13, 2021

RE: DRAFT 2021 Municipal Budget – January 19, 2021 Budget Workshop

The 2021 Budget Process started with the initial submissions of the Departmental Budgets from each of the Township's Department Heads. The Department Heads were instructed to prepare budget requests with each subaccount-starting at zero and were to provide detailed justification of each sub-account request in lieu of pointing to prior years' allocations as the starting point. Individual meetings were held with Department Heads to review their budget requests.

Salary and Wages:

- Salary and Wages have been populated with contractual obligations (steps, longevity and salary increases (2%) and anticipated changes for staffing.

Staff Changes:

- This budget plan includes all staff changes made as of January 1, 2021.
- There has been the elimination of one (1) full-time Administration position (Deputy Clerk Title).
- This plan includes the retirement of the Township Clerk, the appointment of the Deputy Clerk to Township Clerk, and the appointment of a Deputy Manager. Also, this budget plan includes the hiring of a part-time recreation leader. These changes have resulted in overall savings of approximately \$20,000.
- Includes the appointment of a full-time Construction Official effective January 1, 2021, and an increase of the fire subcode official weekly hours to accommodate inspections.
- The current plan includes the salaries for the current census of the Police Department which includes the breakage of salaries from the retiring of two long-term employees and the hiring of new police officers. Police overtime budget was reduced \$20,000.
- This plan includes the retirement of the Senior Buildings and Grounds employee and replacement with a Laborer.
- Includes the reduction of Senior Bus services from three (3) days per week (24 hours) to one (1) day per week (8 hours).

Comments on Appropriations:

- The budget plan includes the implementation of a small-town solution (10 users licenses) of Spatial Data Logic (SDL). This plan is in the process of execution with migration

from a web solution to local server being complete as of January 11. Continuing with the installation of the eight remaining licenses.

- Group Insurance updated based on employee census and the Township's total exposure. Savings from the move to State Health Benefits in 2019 has been factored into the total cost. Moved \$100,000 to DPW Equipment and \$120,000 to Improvements to Streets and Roads.
- Workers Compensation and General Liability Insurance reduced \$30,247 compared to 2020 costs based on three-year renewal with Statewide Insurance. There is concern these premiums are not sustainable in successive years. The \$30,000 saving was moved to Capital Improvement Fund to assist with funding capital projects. This can always be pulled back in a future year.
- First Aid Contributions was reduced \$19,500 from \$25,500 to \$6,000.
- Included \$40,000 in Parks and Playgrounds Salary and Wages to hire a part-time recreation leader. Effective in 2018 the Council decided not to replace the full-time Recreation Director that retired December 31, 2017. This eliminated the full-time position. This individual will be facilitator to the Recreation Committee to assist with Township events. Additionally, they will be responsible for recreation administration including facility applications, recreation procurement and requests for proposals regarding recreation events.
- Pensions:
 - o PERS increase: \$9,807 or 5.6%
 - o PFRS increase: \$71,037 or 14.6%
 - o DCRP increase: \$4,000 or 39.2%

Capital Projects:

- Capital Improvement Fund:
 - o The Capital Improvement Program is the vehicle that allows the Township to plan and prioritize large expenditures.
 - o The Capital Improvement Fund is used as a means of financing down payments for bond ordinance appropriations. Also, the Governing Body can decide to fund a capital ordinance partially or fully from the Capital Improvement Fund.
 - o Total for 2021 = \$471,443
 - Includes \$25,000 that is raised annually to fund the Capital Improvement Fund.
 - Capital Improvement Fund was reduced by the one-time appropriation of an additional \$450,000 to the Capital Improvement Fund in 2020.
- 2021 PROPOSED Capital Improvements – funded from Budget:
 - o Operating portion of Budget:
 - Improvements to Streets and Roads: \$225,500 - \$50,00 reduction from 2020. (Includes \$120,000 from Group Insurance)
 - DPW Equipment: \$100,000 (from Group Insurance)
 - Purchase of Vehicles (Police): \$50,000
- Capital portion of Budget:
 - o Supplement for Streets and Roads: \$100,000
 - o Drainage Improvements: \$5,000
- 2021 Capital Budget (see attached)
 - o The Capital Budget represents the current year of a three-year capital improvement program.
 - o The Capital Budget does not in itself confer any authority to raise or expend funds.
 - o The 2020 Capital Budget includes proposed projects totaling \$2,362,500.

- o Following is summary by department:
 - Streets and Roads: \$1,171,500
 - DPW Equipment: \$293,000
 - DPW Facilities \$200,000
 - Police: \$20,000
 - Fire: \$550,000
 - Parks: \$98,000
 - Drainage: \$5,000
 - Capital Improvement Fund: \$25,000
- o The current budget plan only includes \$871,943 in funds to cover the proposed Streets and Road projects and DPW Equipment which presents a shortfall of \$592,557.
- o Additionally, there is a shortfall of \$898,000 for the remaining unfunded capital projects.
- o As presented in my memorandum of September 25,2020, the annual requested dedicated Street and Road budget should be \$900,000 adjusting annually based on price indicators. This proposed budget does not provide additional dedicated funding for this purpose.

Summary of Revenues:

- The 2021 budget challenges are largely related to reduction of anticipated revenues.
- In 2020, the Township's impact from the COVID-19 emergency has resulted in loss revenue mainly in court and interest on investments. This has an impact on what can be anticipated in 2021.
 - o Municipal Court: Reduction of \$10,000
 - o Interest on Investments: Reduction of \$107,255
- State Aid is anticipated at the same level for Energy Receipts received in 2020 but the plan is expecting a \$22,745 reduction of Garden State Preservation Trust funds.
- Mainly due to the changes to the Uniform Construction Fee schedule to align with the State fees, we are anticipating about a 27% increase in Uniform Construction Revenues. The increased anticipation of revenues is helping offset the increase in the Construction Department operating budget.
- Fund Balance:
 - o In the 2019 budget the dependency on fund balance was increased \$140,398.
 - o In 2020, there was an increase of the dependency of fund balance by \$485,000. The breakdown of 2020 fund balance is as follows:
 - \$1,610,5000: Support Operations
 - \$450,000: Offsets a one-time additional appropriation to the Capital Improvement Fund.
 - \$35,000: Offset of one-time additional appropriation due to unresolved staffing changes in the Construction department.
 - o Fund Balance is generated by several sources including cancellation of budget reserves from 2019, revenues in-excess of anticipated amounts, receipts from delinquent taxes from 2020 and added and omitted taxes collected for when construction improvements are deemed complete by the Tax Assessor.
 - o The cancellation of unexpended balances is expected to be less since we have taken breakage of savings in various appropriations.
 - o Due to the changes to the Township revenues for the 2021 budget year, we are not expecting revenues in-excess of anticipated amounts having a direct impact on the regeneration of fund balance at the end of the 2021 budget year.

- Estimated Fund Balance regeneration in future years is estimated to be in-line with the amount of Fund Balance committed to the budget in 2018 (\$1,470,102)
- This budget plan reduces the amount of Fund Balance \$585,000 to \$1,510,500.
Summary of the change is as follows:
 - Removal of \$485,000 that was considered a one-time additional appropriation in 2020.
 - Reduction of \$100,000 to bring the dependency of Fund Balance in-line with the amount of Fund Balance committed to the budget in 2018.
- The Amount to be Raised by Taxes is presented with an increase of \$64,722 or .75%.



TOWNSHIP OF BYRAM

NEW JERSEY

MAILING ADDRESS:
10 Mansfield Drive
Stanhope, NJ 07874
Phone 973-347-2500
Fax 973-347-0502



WEBSITE ADDRESS:
www.byramtwp.org

TO: Township Council

FROM: Joseph W. Sabatini, Township Manager

DATE: January 11, 2021

RE: SPORTS EQUALITY: Field Line Painting

At the November 2, 2020 meeting of the Mayor and Council there was a discussion regarding Sports Equality. The result of the discussion was for me to present to the Mayor and Council a budget for review to support having DPW paint the lines on all playing fields which includes the cost of paint, equipment, and manpower.

Assumptions:

- It was agreed the budget was to be based on only the painting of the lines on the fields after each of the sport organizations have setup all their fields and initially lined for the sports season.
- DPW cannot guarantee that all fields will be painted once a week due to staffing and weather.

Note: The costs presented below have not been included in the DRAFT budget that was shared on January 9, 2021.

Budget Summary:

Capital Expenditure:

- Self-Propelled High-Pressure Sprayer:
 - o Self-propelled.
 - o Easy reach handlebar with mounted controls.
 - o Adjustable electronic pressure control.
 - o Front swivel wheel which is great for arcs and circles.
 - o Recommend by other municipalities.
 - o Can be used to restripe parking lots.
- 55 Gallon Paint Mixing System:
 - o Allows for proper and thorough mixing of field marking paint at any dilution rate.
 - o Large, 55-gallon capacity tank with 110-volt motor cuts prep time.
 - o Translucent container for better paint visibility.
 - o Fiberglass tank and lid with easy flow gate valve and heavy-duty stainless-steel stand which allows for dispensing into 5-gallon pails.

- Total Estimated Capital Costs for Sprayer and Mixing System: \$8,000

Operating Expense Budget:

- Paint Cost – Estimating an annual paint cost of \$5,000.
 - o Assumes having the mixing system to have ability to mix and dilute the paint.
 - o Based on number of fields that sports organizations are using and discussion with other municipalities.
 - o Currently, the Township spends approximately \$2,000 per year on paint.
- Estimated increase in the Operating Expense Budget: \$3,000.

Labor Cost:

- Estimated it will take on average sixteen hours per week to line the fields.
- Estimated approximately 30 weeks (April – November)
- Blended hourly salary of summer helper, laborer, public works repairer (excluded senior public works repairer) = \$18.55/hour
- Estimated Labor Cost: (30 weeks X 16 hours X \$18.55 hour) = \$8,904
- The Labor Cost or Opportunity Cost:
 - o Assuming the budget will not permit the hiring of a part-time employee with sole responsibility of lining fields.
 - o Opportunity Costs Definition:
 - “In economics, opportunity costs refer to the value of the next-best alternative use of that resource given limited resources. They are applicable beyond finance and accounting. In daily life, opportunity costs are the benefits or pleasures foregone by choosing one alternative over another.”
 - Source: <https://strategiccfo.com/opportunity-costs/>
 - o This is a critical concept. At the same time the Department of Public Works is being asked to line fields it removes sixteen hours of labor from other projects that compete for completion during the same time period.

TOWNSHIP OF BYRAM			CAPITAL IMPROVEMENT PROGRAM 2021-2023								
2021 CAPITAL BUDGET						5% Down Pymt					
				CAPITAL							
		Proposed	2021	2021	Amounts	Capital	Grants and				
		Costs	Budget	Budget	Reserved In	Improvement	Other	Debt	Other		
Proposed Projects	DEPT		O&E	Appropriation	Prior Years	Fund	Funds	Authorized	Funding	NOTES	
NJDOT Project - Fieldstone Trail - Mill & Pave	ROADS	\$317,500	\$151,300	\$0	\$0	\$0	\$166,200	\$0	\$0		\$317,500
Various Street and Road Projects - Mill & Pave - Deer Hill Run North & South \$78,000 - Continental Drive \$90,000 - Cranberry Lake Area \$186,000 - Route 206 Corridor \$270,000 - Forest Lakes Area \$200,000	ROADS	\$824,000	\$44,200	\$100,000	\$0	\$253,443	\$0	\$426,357	\$0		\$824,000
Roadway Crack Sealing and Roadway Striping	ROADS	\$30,000	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0		
DPW Equipment: - 3500 4X4 \$60,000 - Mason Dump \$90,000 - Loader \$130,000 - Ride-on Spreader/Sprayer Applicator \$13,000	ROADS	\$293,000	\$100,000	\$0	\$0	\$193,000	\$0	\$0	\$0		\$293,000
DPW Facility	BUILDING	\$200,000	\$0	\$0	\$0	\$10,000	\$0	\$190,000	\$0	DPW Breakroom, Lockers and Bathroom DPW Garage - Lean-to Addition (Storage of Equipment) NO ESTIMATE	\$200,000
ALCOTEST - Alcohol Drug Testing	POLICE	\$20,000	\$0	\$0	\$0	\$20,000	\$0	\$0	\$0		\$20,000
Playground Equipment - Riverside Park	PARKS	\$98,000	\$0	\$0	\$0	\$4,900	\$0	\$93,100	\$0	Still recommending Playground Equipment Replacement at COJ - \$250,000	\$98,000
Fire Engine	FIRE	\$550,000	\$0	\$0	\$0	\$27,500	\$0	\$522,500	\$0		\$550,000
Drainage Improvements		\$5,000	\$0	\$5,000	\$0	\$0	\$0	\$0	\$0	Annual approp. to reserve	\$5,000
Capital Improvements		\$25,000	\$0	\$0	\$0	\$25,000	\$0	\$0	\$0	Annual approp. to fund projects/downpayments	\$25,000
TOTAL		\$2,362,500	\$325,500	\$105,000	\$0	\$533,843	\$166,200	\$1,231,957	\$0	\$2,362,500	\$2,332,500

Capital Projects 2021 - 2033	Dept	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Comments
DPW Breakroom, Lockers and Bathroom DPW Garage - Lean-to Addition (Storage of Equipment)	Buildings	\$200,000													NEED TO GET BETTER ESTIMATES
		\$200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
P-1 2012 GMC 3500 EX Cab 4x4	DPW		\$50,000										\$55,000		
P-2 2017 F-350 4x4	DPW							\$50,000							
P-3 2007 Dodge 3500 DRW 4x4	DPW	\$60,000													
P-4 2017 F-350 4x4	DPW							\$50,000							
P-5 2018 F-350 SRW 4.4	DPW								\$50,000						
P-6 2017 F-250 ex cab 4x4	DPW						\$50,000								
P-7 2019 F-350 ex cab 4x4	DPW									\$55,000					
M-1 2018 F550 Mason Dump	DPW								\$100,000						
M-2 2009 Sterling bullet	DPW			\$90,000										\$90,000	
M-3 2009 Sterling bullet	DPW		\$90,000										\$90,000		
M-5 2009 Sterling bullet	DPW	\$90,000										\$90,000			
FB-1 2019 Ford F550 4x4 Flat Bed	DPW									\$85,000					
D-1 Hook Life Truck	DPW														
D-2 2015 Freightliner Dump	DPW														
D-7 2008 International Dump	DPW					\$200,000									
2017 521GXR Case Loader	DPW										\$130,000				
2019 John Deere Tractor Compact with Attachments	DPW														
2001 New Holand LW170 Loader	DPW	\$130,000													Running until has no useful life. Replace with smaller machine at that time.
2019 Case 580SN - Backhoe	DPW														
2019 Case TR310 Track Loader w/attach	DPW														
2003 McCormick CX 70 Tractor	DPW			\$100,000											
2018 Bandit Chipper	DPW														
2017 Diamond Road Mower Attachment	DPW								\$40,000						
2007 Grounds Master Side Winder	DPW		\$40,000												
2017 Scag 72" Zero Turn Mower S-1	DPW				\$15,000										
2017 Scag 72" Zero Turn Mower S-2	DPW					\$15,000									
2019 Scag 72" Zero Turn Mower S-3	DPW							\$15,000							
2009 Perma Green Ride-on Applicator	DPW	\$13,000													
2018 John Deere Midsize Tractor	DPW														
2004 Elgin Street Sweeper	DPW				\$220,000										
2001 Landscape Trailer	DPW		\$7,000												
2008 Landscape Trailer	DPW								\$7,000						
2019 Sure Trac Mason Trailer	DPW									\$5,000					
2019 Equipment Trailer	DPW									\$7,000					
2017 CCM20SE Equipment Trailer	DPW									\$6,000					
2019 Case Skid Steer with Attachments	DPW														
1996 Whacker Roller RD880	DPW						\$20,000								
2019 Falcon Asphalt Hot Box	DPW									\$45,000					
2020 Sure Trac Implement Trailer	DPW											\$7,000			
Sub Total for DPW		\$293,000	\$187,000	\$190,000	\$235,000	\$215,000	\$70,000	\$115,000	\$197,000	\$191,000	\$142,000	\$97,000	\$145,000	\$90,000	
Replace Engine 1 1998 E-one Engine	Fire	\$550,000													
Exhaust System for Apparatus (Cranberry and Lackawanna)	Fire	\$47,000													
SCBA Replacement - End Of Life	Fire		\$70,000	\$70,000	\$70,000										
Sub Total for Fire		\$597,000	\$70,000	\$70,000	\$70,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Alcotest	Police	\$20,000													New Alco test machine will be rolled out in select departments in Monmouth County beginning in 2020. I am unsure of whether or not we will receive our new machine in 2020 or 2021 but a plan should be solidly in place for 2021. The state dictates roll out and no plans of how the roll out will be accomplished (ie county by county, most DWI arrests etc) have been released even in rumor form \$20,000
Replace 4-wheel drive vehicle - Chevrolet Tahoe if necessary.	Police			\$60,000											

Sub Total for Police		\$20,000	\$0	\$60,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2021 NJDOT GRANT PROJECT (Mill & Resurface): Fieldstone Trail	Roads	\$317,500												2021 NJDOT Municipl Aid Grant Requested: \$250,000
Mill & Resurface - Deer Hill Run North & Deer Hill Run South	Roads	\$78,000												Complete samtime as Fieldstone Trail
Mill and Resurface - Continental Drive	Roads	\$90,000												Coordinate completion with Mt. Olive
Mill and Resurface - Cranberry Lake Area (Weaver House Cove Road, Brook Trail, Hickory Trail, Fox Trail, Side Hill Trail, Boulder Trail, Hawthorne Trail, Landone Trail, Bald Roack Trail, Pathfinder Trail)	Roads	\$186,000												
Mill and Resurface - Route 206 Corridor (Jans Way, Rosemarie Lane, Maple Road, Birch Road, Willor Drive, Drexel Drive, Francis Terrace, Hi Glen Drive, Pierson Drive, Ridge Place, Johnson Boulevard, Jones Lane)	Roads	\$270,000												
Mill and Resurface - Forest Lake Roadways (Crescent Drive North and Winding Way)	Roads	\$200,000												
Anual Budget: Roadway Crack Sealing and Roadway Striping	Roads	\$30,000												Crack Sealing: \$20,000 Striping: \$10,000
FUTURE NJDOT GRANT PROJECTS (Mill & Resurface)	Roads		\$207,000	\$364,000	\$343,000	\$217,000	\$301,000	\$197,000	\$299,000	\$380,000				
Mill Paving, Cape Seal and Oil Stone Projects	Roads		\$652,000	\$589,000	\$550,000	\$640,000	\$0	\$448,000	\$475,000	\$501,000				
Sub Total for Roads		\$1,171,500	\$859,000	\$953,000	\$893,000	\$857,000	\$301,000	\$645,000	\$774,000	\$881,000	\$0	\$0	\$0	\$0
Riverside Park - Playground	Parks	\$98,000												2020 Quote ESCNJ Coop - Ben Shaffer Recreation = \$97,711.21
Sub Total for Recreation		\$98,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

ADMIN	\$200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DPW	\$293,000	\$187,000	\$190,000	\$235,000	\$215,000	\$70,000	\$115,000	\$197,000	\$191,000	\$142,000	\$97,000	\$145,000	\$90,000	
FIRE	\$597,000	\$70,000	\$70,000	\$70,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Police	\$20,000	\$0	\$60,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Roads	\$1,171,500	\$859,000	\$953,000	\$893,000	\$857,000	\$301,000	\$645,000	\$774,000	\$881,000	\$0	\$0	\$0	\$0	
Recreation	\$98,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Totals	\$2,379,500	\$1,116,000	\$1,273,000	\$1,198,000	\$1,072,000	\$371,000	\$760,000	\$971,000	\$1,072,000	\$142,000	\$97,000	\$145,000	\$90,000	

TOWNSHIP OF BYRAM

NEW JERSEY

MAILING ADDRESS:
10 Mansfield Drive
Stanhope, NJ 07874
Phone 973-347-2500
Fax 973-347-0502



WEBSITE ADDRESS:
www.byramtwp.org

MEMORANDUM

TO: Township Council

FROM: Joseph W. Sabatini, Township Manager

DATE: September 25, 2020

RE: Road Resurfacing – Annual Dedicated Funding and Program Support

Objective:

- Establish and support an annual dedicated road resurfacing budget.
- Council support for road resurfacing program.
- Byram Township's roadway improvement plan covers the maintenance of 52 miles and about 718,516 square yards of Streets and Roads.
- Milling and Paving is the desired Road Treatment Program.
- To Mill and Pave all roads in the Township using estimated 2021 costs it would total \$11,855,519.
- Annual requested Dedicated Budget for 2021 starts at \$900,000, adjusting annually based on price indicators, and assuming an average 13-year pavement schedule.
- This dedicated budget does not include additional maintenance costs for replacement of berms, fixing of potholes, crack sealing and other patch repairs.

History:

See Minutes from July 2, 2013 Mayor and Council Meeting.

2012 through 2015:

- During the February 7, 2012 meeting of the Mayor and Council there was a discussion regarding the Township's 10-year Road Resurfacing Plan.
- At the time, the Township had completed topcoat paving in West Brookwood which ended a very lengthy cycle of paving all the Township's roads and the

Township is at point of cycling back to the roads that were last top coated in 1999.

- The cost of asphalt had continued to increase, but the budget did not. There was discussion about alternatives for a lower-cost solution to extend the life of the roads. An oil and stone program was presented as one of the alternatives.
- 2012 – Oil and Stone was completed on roads off Route 206 (i.e., Rosemarie Lane, John/Pierson, etc.)
- In 2013, the Township completed oil and stone in Lackawanna and Tamarack area. At the July 2, 2013 meeting of the Mayor and Council there was a lengthy discussion of the Township's street and road program due to opposition from the residents of Lackawanna.
- Underlying issue; the amount of funding allocated to improvements to the Township's street and roads remained inadequate.
- 2014/2015 – oil stone was completed in Forest Lakes section on the local roads.
- The process of oil and stone evolved to require public bidding to support a process of application that included an asphalt paving box to evenly spread the stone, and the completion of double and triple passes on sections of the roads that had severely degraded.
- This increased the cost of oil and stone program but remained the lower cost option to the alternatives.

2016 to Present:

- In 2016, was the first time the Township completed a cape seal project. This was completed on Forest Lakes Drive that is considered a collector roadway.
- 2018 – completed cape seal in Lackawanna area.
- 2019 – completed cape seal and oil and stone on roads in Tamarack Road area.

2008 to Present:

- Each year there has been the combination of mill and pave projects, or complete road reconstruction projects completed on arterial and collector roads.
- These were road improvements in addition to the oil and stone and cape seal programs.
- Many of these roadways were supplemented with NJDOT grant funding.

Late 2019 to Present:

- See memo from Township Engineer dated December 31, 2018.
- Through the 2019 Capital Budget the Department of Public Works received the requested equipment in late 2019.

- Starting in spring of 2020, the Department of Public Works incorporated road edge maintenance as well as properly addressing potholes and other severely deteriorated sections of the roadways.
- In comparison through the end of August 31, 2020, the DPW has placed 166 tons of asphalt material compared to only 124 tons for all of 2019.

Roadway Improvement Types:

Oil and Stone Program:

- The process includes a layer of emulsified asphalt that is placed over existing pavement that has been prepped to address potholes, and other roadway damage. A layer of stone is then placed over the pavement and rolled to lock the stone into the emulsified asphalt.
- An oil and stone program is a method of sealing and providing a new wearing surface. There is very little grade change when you oil and stone. Grade changes introduce issues with water runoff from the roadway and increase steepness of driveways.
- This program was proposed to provide the Township a means to extend the life of the roadways.
- Average cycle is 3-5 years.

Cape Seal:

- Cape Seal is the combination of an oil and stone application with a slurry seal application.
- The oil and stone portion of this application helps provide a waterproof membrane to repel moisture from entering the sub-grade and adds elasticity to prevent reflective cracking from showing through the new surface.
- After the oil and stone process has been completed, the slurry seal is applied to hold the loose stone material in place and provides a smoother texture for the final product.
- This program was proposed to provide the Township a means to extend the life of the roadways.
- More desirable option because provides for a smoother riding service but is an increased cost over just oil and stone.
- There is very little grade change when you cape seal.
- Challenges – requires a period during application of slurry seal when roads need to be closed. Significant resident complaints of inconvenience.
- Application on many of the Township's local roads is very difficult.
- Average cycle is 8 years.

Microsurfacing:

- Microsurfacing is most effectively used as a pavement preservation technique on roads that have started to show signs of aging, cracking, oxidation, and other minor distressing.
- Only includes a slurry seal application.
- Does not support providing a waterproof membrane to repel moisture from entering the sub-grade as supported with the oil and stone portion of cape seal.
- There is very little grade change.
- Challenges – requires a period during application of slurry seal when roads need to be closed. Significant resident complaints of inconvenience.
- Application on many of the Township's local roads is very difficult.
- Average cycle is 8 years.

Resurfacing Only:

- This is the program that was completed at the end of 1999.
- This program typically comprises applying a 2-3-inch top course to existing pavement.
- There is no reconstruction of the road or addressing any of the subbase.
- This is a favored program since it can immediately be driven on and provides for a smooth riding service.
- The program has resulted in significant issues. The profile of the roadway was raised creating issues with drainage and drastically increased the requirement for berms. Additionally, the roadway in most cases was widened with pavement extending beyond existing road subbase. This has resulted in deterioration of the road edges and ruts that have been cut by water erosion.

Milling and Paving (RECOMMENDED PROGRAM):

- The milling process consists of using a milling machine to scrape off the top layer of asphalt to a specific depth.
- Once the asphalt is scraped off the remaining asphalt is swept clean and an asphalt tack emulsion is applied.
- Once the tack is applied a new layer of asphalt is paved over the milled surface, compacted, and striped (if needed).
- Milling will support returning the road to the original profile reducing the need for berms and better managing water runoff.

Road Reconstruction:

- Reconstruction is reserved for those streets and roads that have exceeded their useful life and cannot be maintained further. This is the most expensive roadway improvement program.

- The Township has done complete road reconstruction on arterial and collector roads. There should not be a need to consider road reconstruction if we are addressing these roadways before there is a deterioration of the subbase.
- The process includes a complete excavation of the existing road and reconstruction.
- This has included reclaiming the road, removing, and replacing material, rolling, and using calcium chloride to stabilize the base. This is followed by a 3-4-inch base course, followed by a 2-3-inch top course.

Byram Township 10 Year Roadway Improvement Plan:

- Township maintains a 10-year capital roadway improvement plan.
- This plan includes a list of every roadway in the Township.
- Byram Township's roadway improvement plan covers the maintenance of 52 miles and about 718,516 square yards of Streets and Roads.
- The plan categorizes the Township's Streets and Roads into three categories of roadway types:
 - o LOCAL – A local road is a street that is primarily used to gain access to are resident's property.
 - o COLLECTOR ROADWAY – A collector road is a low-to-moderate-capacity road which serves to move traffic from local streets to arterial roads.
 - o ARTERIAL ROADWAY - An arterial road is a higher-capacity urban road. The primary function of an arterial road is to deliver traffic from collector roads to highways or urban centers.
- The plan attempts to estimate and plan out 10 years of roadway improvements considering the varying roadway improvement types.
- Working on including a Pavement Condition Index (PCI) into the plan. This gives a numerical rating to the condition of every road in the Township's inventory. The PCI system is a subjective rating system done through observation. The system considers the different road conditions and faults, as well as the comfortability of the ride.