



**BOROUGH OF
WESLEYVILLE**

Pavement Plan

September 2024 – Manager Jacobs

A plan for the effective investment in our
critical infrastructure.

Outline



**BOROUGH OF
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- Overview of our Transportation system
- Review of 2024 Season
- Our Concrete Streets
- Critical Pavement Preservation Technique
- Plan for the Road Ahead



**BOROUGH OF
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System Overview

System Overview



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Borough owns 10.01 miles of public roadway

Equates to 16.37/ft roadway/person

- According to the 2020 Census population of 3,229.



System Overview



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Borough Resurfacing Cycle

For asphalt roadways, PennDOT recommends a 12–15-year resurfacing cycle.

We should aim for a 20-year cycle because it is more affordable and achievable.

Therefore, to meet a 20-year cycle goal, the Borough, with 10.01 miles of roadway needs to resurface on average about **0.5 miles** of roadway to expect to hit the **20-year target**.



System Overview



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General Road Lifecycle:

- Newly reconstructed
- After 5-7 years – Begin a schedule of pavement preservation techniques with treatments applied every 5-7 years.
- Hopefully, we can get a good 20+ years out of the road before it is bad enough it must be milled and resurfaced.
- After 50-60 years – Road will likely need more significant refurbishment/reconstruction.



System Overview



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Other things to consider;

- ADA-compliant ramps



System Overview



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ADA-compliant ramps

The Borough is committed to improving all aspects of its transportation system to meet the standards set by the American's with Disabilities Act.

Every time a roadway is impacted (meaning resurfaced or reconstructed) the Borough includes these improvements in the project scope.



System Overview



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Other things to consider;

- ADA-compliant ramps
- Stormwater drainage



System Overview



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Stormwater drainage

Managing stormwater is essential for an effective transportation system.

We have an aging system with many components falling apart.

- Catch basins that are crumbling masonry.

Must make investments to improve the system and that is best completed at the same time as the roads.



System Overview



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Other things to consider;

- ADA-compliant ramps
- Stormwater drainage
- Road Signs



System Overview



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Road Signs

The Borough has a responsibility to post signage along its roads.

- Stop signs, speed limit signs, street name signs, one ways, etc.

Currently the signage is old and no longer functional

This is often forgotten about when budgetting and the cost quickly stacks up when considering the scale of this signage that is needed.



System Overview



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Road Signs

Currently the signage is old and no longer functional

- Dilapidated
- Non-reflective
- Large enough



System Overview



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Road Signs

We must have a plan to improve our road signage.

This is often overlooked during budgeting, and the costs can quickly add up when considering the scale and variety of signage needed to cover 10 miles.



System Overview



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Other things to consider;

- ADA-compliant ramps
- Stormwater drainage
- Road Signs
- Line painting



System Overview



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Line painting

Lines delineate areas of the pavement and make it safer and more efficient to travel.

Intend to paint nearly all the crosswalks and business district parking spaces at least bi-annually.

Completed in-house and can be a challenging undertaking for our relatively small Public Works Crew.



System Overview



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Worth Noting

Transportation infrastructure is a challenge for everyone.

2 PennDOT approved firms in this region capable of working on public roads.

One of them is headquartered right here in the Borough, McCormick Construction.

Contractors come from all around the region to the asphalt plant off of Pearl Ave.





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2024 Review

Wesleyville.gov

2024 Review



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Transportation Office

Reconstruction – 2 blocks of Center St. - ~\$300,000

- Shoutout to County Exec Davis for contributing \$250,000 of GAP Funds

Resurfacing – Eastern Ave, Willow Ave, Gray Ave, and

Idlewood Drive – 0.65 miles - \$209,954

Preservation – Seal Coating – Tar & Chip - 1.05 miles - \$45,205

ADA Improvements – 18 ramps total - \$49,500

Hinkler Park Parking Lot - \$11,734

Over \$616,000 invested in our transportation infrastructure





Our Concrete Streets

What are We up to?



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The Borough owns quite a few streets that either have a concrete surface or have a concrete base that has been overlaid with asphalt. (often evidenced by their reflective cracks that peer through the asphalt.)

Amazing that many of them have lasted for 50+ years



What are We up to?

Reached the end of their life cycle.

They are cracked, uneven, and heaving.

Repair options are limited, the premiere option is to rip out all the concrete, haul it away, and reconstruct the roadway from scratch this time in asphalt.



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What are We up to?



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If we are fully reconstructing the roadway then we really need to be completing multiple projects in tandem. Ex. Sewer line, stormwater drainage, curbing and ADA ramps.

Euclid Boulevard, our longest and most notorious concrete street needs a full new sewer line under the whole road, it also needs ADA improvements along the whole stretch, and new stormwater drainage.

Est. \$2,000,000 price tag, increasing year-over-year.





Pavement Preservation Techniques

Preservation Techniques



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- Crack filling



Preservation Techniques



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Crack filling

- These are the squiggly lines that you see on roads.
- Kind of ugly but they serve an important role
- Applying a line of oil to a crack, which fills in the crack, preventing more water from seeping deeper in, freezing and then weakening the pavement further.

The Borough has outsourced this process to third party vendors that have the specialized equipment and manpower to complete this work.



Preservation Techniques



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- Crack filling
- Pothole filling



Preservation Techniques



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Pothole filling

Completed in-house by Public Works Crew.

Potholes in the road surface are swept out and cold patch is put in the hole this helps to prevent

- more water getting in.
- the pothole growing.

Pothole patching is a quick fix to buy time until the next resurfacing.



Preservation Techniques



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Pothole filling

If significant potholes are forming somewhere continuously, it might be a sign of a larger problem, such as the underlying foundation needing more extensive base repair to permanently fix.

Ideally potholes would be prevented before they form.



Preservation Techniques



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- Crack filling
- Pothole filling
- Seal Coating



Preservation Techniques



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Seal Coating - "Tar and Chipping"

- The process begins with spraying an oil-based mix onto the existing asphalt surface, which saturates the surface and seeps into cracks, sealing it uniformly.
- This is immediately followed by a layer of aggregate rock, or "chips," which sets into the oil, creating a new roadway surface and protecting the oil layer.
- After about a month, once the surface has been driven on and settled, the Borough uses a street sweeper to collect the excess rocks. **Note:** Rain is necessary for this process.



Preservation Techniques



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Seal Coating - "Tar and Chipping"

- It uniformly protects the road surface and preserves it for longer
- Meaning the good asphalt roads we do have will last longer before crumbling, more costly repairs can therefore be delayed, and the finite resources we have can be focused on other priority areas.
- Seal coating is relatively inexpensive
 - about 8-10x cheaper than a resurfacing – Mill and Repave
 - a multitude cheaper than a reconstruction – Ex. Center St

Preservation Techniques



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Seal Coating - "Tar and Chipping"

The Borough is a part of a joint bid packet that includes nearly 20 other municipalities.

This joint effort increase our quantities and provides us relatively good prices.

2023 Season – 2.34 miles total

- College Heights, 27th – 32nd Streets (Groveland to Station)

2024 Season – 1.02 miles.... so far

- Union Ave (Buffalo to Euclid)
- Woodlawn Ave (Bird to Station) and
- Willow (Woodlawn to Fremont)

Preservation Techniques



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Seal Coating - "Tar and Chipping"

It only works in certain circumstances;

- Must be an asphalt surface.
- Must be relatively flat without bumpy rough spots and without tiretrack divets
- Must not be too new, 6 years or longer since last resurfacing
- Must not be beyond saving, if the road is in real bad shape and resurfacing is needed/anticipated within the next 5 years, it doesn't make sense to spend money sealing the road.

Seal coating does not repair, it preserves.

Preservation Techniques



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Seal Coating - "Tar and Chipping"

Cons:

- New to the Borough, not something people are used to here yet. Something traditionally seen in a rural community
- Downgrade, not as good as a resurfacing
- Dusty and debris
- Rough riding surface for the short term
- Frustration as to why certain streets are chosen rather than other streets

Preservation Techniques



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Seal Coating - "Tar and Chipping" - Dispelling Concerns

Safety

This is a PennDOT-approved and recommended preservation tool. In the context of our roads, no discernible safety risks have been identified.

Motorcyclists and motorists alike must exercise caution. Especially in the initial days and weeks after application, during this time signs are posted notifying travelers of tar and chips.

Preservation Techniques



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Seal Coating - "Tar and Chipping" - Dispelling Concerns

Safety

When driving within the prescribed speed limits and carefully approaching intersections, the impact of the chips on the roadway surface is negligible to the safe and functional operation of the road. Also, what is safer a smooth road from tar and chipping or a bumpy pothole-ridden road.

Preservation Techniques



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Seal Coating - "Tar and Chipping" - Dispelling Concerns

Debris

At least a month after the application, once the chips have settled and there's been a good rain, the Public Works crew performs the following tasks:

- Run the street sweeper over the roadway once or twice to clean up excess chips.
- Use the hose on the street sweeper to vacuum out the catch basins, as some chips accumulate in the stormwater drains.

Preservation Techniques



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Seal Coating - "Tar and Chipping" - Dispelling Concerns

Public Knowledge

- If you've listened this far and you now better understand the thinking behind seal coating, please share it with your friends and neighbors in the community and help to clarify the transportation decisions that are made.

Preservation Techniques



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Seal Coating - "Tar and Chipping"

Overall, within six months of seal coating, the roadway becomes nearly indistinguishable from an asphalt-topped surface.

Preserving our roads is essential to saving resources and allows us to focus more on repairing severely deteriorated roads, such as our concrete streets.



Plan for the Road Ahead

Plan Ahead



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Seal Coating 2024 – Round 2 - \$25,533

- Rose Ave ext. - East of Station
- Francis Ave ext. - East of Station
- Woodlawn Ave ext. - East of Station
- Fremont St - Hinkler Park Exit to Water Street
- Skellie Ave – Station to Willow
- Eastern Ave – North to Pearl
- Hinkler Parking Lot – Whole new parking lot and entrance/exit ramps

Additional 0.72 miles, 2024 total of 1.74 miles.

Meaning 40% of our roadway system has been seal coated in the last 2 years.

Plan Ahead



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Seal Coating 2024 – Round 2

- Preserve these roads before they experience another winter
- We are a part of a joint bid getting this year's price
- The unit price we enjoy now will likely increase in next year's bid so
- these roads, if we intend to ever seal coat these Borough owned roads, now is as cheap and as effective as it will ever be again.



Conclusion



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The Borough aims to improve the community's transportation system. With limited resources, we must focus on maximizing every dollar and adopting new methods to boost efficiency and functionality.

Seal coating is a valuable tool to help break the cycle and address decades of overdue infrastructure improvements.

Seal coating is cost-effective and extends the life of our roads.

A penny saved by resurfacing asphalt less often, is a penny earned towards reconstructing the Borough's concrete streets.

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- Overview of our Transportation system
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One More Thing



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Transportation planning can be challenging, especially with a small team.

- If you think you might have a knack for transportation planning, we could certainly use the help, and you would have a significant impact.
- People are needed to;
 - help gather information on the current state of the system and
 - help organize the data and analyze it.



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Thank You

I hope this presentation was insightful and you have a better understanding of the Borough's transportation system