

HKOAI Board of Directors

Summary of Long-Term Paving & Culvert Plan

Name	Position	Role in Paving Project
Greg Sadler	President, HKOAI	Advisor
Desiree Williams	Vice President, HKOAI	Project Lead
Watts Hill	Treasurer, HKOAI	Advisor
Ron Perlik,	Secretary, HKOAI	Advisor
Barry Smith	Director, HKOAI	Advisor
Jerry Soucy	Former Board Member, HKOAI	Advisor
Keith Arnett	President, HKUI	Consultant
Dan Althouse	Consultant, HKUI	Consultant
Garrison Myer	Consultant, HKUI	Consultant
Jerry Pomeroy	Field Services Manager	Consultant
Pam Mainhart	Administrative Coordinator	Consultant

Executive Summary

Currently, High Knob has 5.89 miles of unpaved roads. Based on 2022 figures, it would cost HKOAI approximately \$863,824.50 to pave these roads. The high costs associated with paving required the Board to develop a concrete plan to execute a multi-year savings cycle to accumulate the necessary funds.

Since FY 2016/17, HKOAI has experienced an extended period of budgeting stability, which has allowed the Board to regularly accumulate an annual surplus of capital funds. In alignment with its duty to use these surplus funds to improve High Knob, the Board decided to develop a long-term paving plan. To be well-managed, this large-scale project would need to be spread out over many years (5-10+ year) and based on an annual assessment of labor and supply costs, build-out rates, and budgetary capacity.

To that end, Ms. Williams volunteered to lead the working sessions necessary to develop such a plan. Over a period of seven months (October 2021- April 2022), the HKOAI Board held multiple public meetings to discuss the long-term paving culvert plan for High Knob.

During the April 2022 board meeting, Ms. Williams then presented the plan to the HKOAI board. After a review, the Board voted unanimously to approve the plan.

Long-Term Paving & Culvert Plan

During the working sessions, the Board and residents:

1. Discussed the results of the 2018 analysis, which was conducted by Mr. Arnett (who was the HKOAI Treasurer at the time) and staff;
2. Reviewed all reference materials, including Bushman Engineering's *Stormwater Calculations for High Knob Subdivision* report (2009) and the Warren County Geographic Information Systems (GIS);
3. Conducted a detailed review of each road to understand the benefits and costs associated with paving;
4. Updated the figures and calculations used in the 2018 analysis;
5. Finalized the criteria incorporated into the road paving project;
6. Developed an objective methodology based on a weighted model of that criteria; and
7. Established a tentative paving timeline based on budgetary guidance

Primary factors that were discussed:

- Road length and average road width, as defined in the Bushman Engineering survey
- Buildout percentage for each road, as detailed by GIS
- Culvert status (condition, estimated lifespan, and costs), as estimated by Mr. Pomeroy and the Bushman Engineering survey

Secondary factors that were taken into consideration:

- Winter maintenance vs. general maintenance struggles
 - Some unpaved roads are harder on the heavy equipment and/or require frequent regrading & gravel
- Job size & timeline
- Efficiency gains
 - Could paving a road tackle multiple HKOAI or HKUI objectives at once or could they be grouped together based on proximity and mileage?
- Sequencing considerations
 - What is the impact if a road is paved prior to the completion of a water works project?
- Deferred costs
 - Could HKOAI charge HKUI to repave roads after water lines are installed?
- Major engineering projects
 - Split Rail: Drainage from Windy Way requires significant culvert work, raising the road bed 18-20", and electricity pole is involved (\$~25-30k additional cost)

- Salt Lick: Builder installed a manhole to deal with a natural spring, which drains in the middle of a private lot that is on a cliff (\$50-60k additional costs)
- Mountain Top: Water works project requires blasting bedrock

Finalized Project Criteria & Methodology

After much discussion, the Board (with input from High Knob residents) finalized the following project criteria and methodology:

Priority	Weight	Factor	Description	Source
1	.25	Buildout rate	Percentage of lots developed on a particular road	Warren County GIS
2	.25	Major engineering project costs (covered by HKOAI)	Costs associated with addressing a major engineering project prior to paving a road	<ul style="list-style-type: none"> ● Bushman survey ● Field Services staff
3	.20	Culvert installation & replacement	Costs associated with replacing existing culverts or installing new culverts before paving can begin	<ul style="list-style-type: none"> ● Bushman survey ● Field Services staff ● Time & materials estimation
4	.20	Paving costs	Calculation based on road size (square yards = linear feet and average width of road) and estimated cost of materials	<ul style="list-style-type: none"> ● Bushman survey ● Field Services staff ● Time & materials estimation
5	.05	Winter maintenance issues	Assessment about how hard winter maintenance is on the heavy equipment	Field Services staff
6	.05	General maintenance issues	Assessment about how extensive the routine maintenance is for an unpaved road	<ul style="list-style-type: none"> ● Field Services staff ● Unpaved maintenance costs

Proposed Project Timeline

After discussing the budgetary concerns associated with the long-term paving project, the Board agreed on following tentative timeline:

- During FY 2021-22, both HKOAI and HKUI boards would focus on hiring a new Field Services employee as a shared resource
- After the employee is hired, the HKOAI Board would shift focus to saving surplus capital funds to pave the highest priority road, a process that was expected to take at least three fiscal years
- This 3-year cycle would be repeated until the last unpaved road was paved

Acknowledgements

Throughout the process, the Board actively solicited commentary and feedback from residents. Their engagement and participation throughout the process was critical to the development of the paving plan. The Board extends its sincere gratitude to those residents who attended the working sessions.

The Board would also like to thank Mr. Pomeroy, Ms. Mainhard, Mr. Arnett, and Mr. Althouse, and Mr. Myer. They provided critical information about High Knob roads and water infrastructure during the analysis phase. Their guidance was critical to substantiating the criteria used in the final weighted methodology.

Reference Materials

Google Slide Decks:

- [HKOAI Long-Term Paving & Culvert Planning Kick-off Deck \(October 2021 Board Meeting\)](#)
- [HKOAI Long-Term Paving & Culvert Planning Working Session #1 \(11/15/21\)](#)
- [HKOAI Long-Term Paving & Culvert Planning Working Session #2 \(12/20/21\)](#)
- [HKOAI Long-Term Paving & Culvert Planning Working Session #3 \(1/24/22\)](#)
- [HKOAI Long-Term Paving & Culvert Planning Working Session #4 \(3/4/22\)](#)
- [HKOAI Long-Term Paving & Culvert Planning Working Session #5 \(4/21/22\)](#)
- [HKOAI Long-Term Paving & Culvert Plan \(November 2021\)](#)