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## INTEROFFICE MEMO

DATE: 8/30/19

TO: Director Hitchcock

FROM: Michael Subers

RE: Public Works Facility Roof Replacement

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The current roof material at the Public Works garage is ethylene propylene diene monomer (EPDM). The older portion of the roof, which is to be replaced, is ballasted while the newer portions of the roof are fully adhered. Ballasted roofs have a lower cost because the EPDM is held in place by aggregate rather than adhesives.

Since Brian Yarbrough and I have been tasked to investigate the replacement of the Public Works Garage roof, we have encountered a variety of replacement options.

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1. Ballasted EPDM
  2. Adhered EPDM
  3. Thermoplastic Polyolefin (TPO)
  4. Cold tar / hot tar Bitumen
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The Bitumen option has the greatest longevity of all the products and would require a full removal of existing materials. This roof is a multi-layered system which is considered one of the best in the industry. The warranty on this installation would be 30 years. This option was estimated to cost in excess of \$425,000 for the 22,000 sqft. Replacement and exceeds the current budget.

Adhered EPDM was not recommended by any contractor because it has a shorter lifespan than the Ballasted EPDM. This is because the naturally black EPDM is

chemically treated to make it white, for reflective purposes, which slightly diminishes the longevity. With this method there is also increased costs of adhesion agents and labor. Because of the shorter life span and increased costs, we did not pursue this option.

The next option we looked at was TPO. TPO systems have welded seams which create a single layer membrane. Although the installers will issue a 20-year warranty, most data show this system has a life span of 15-20 years. This system again is fully adhered which makes the installation more expensive than the ballasted EPDM.

It appears based on the criteria of price and longevity, that the best option of material for the replacement of the Public Works Roof would be a ballasted EPDM roof. This system has a loose-layer insulation that creates the proper pitch to the drains which makes it the least labor intensive-keeping installation cost down. The EPDM also has a longevity within 20-25 years making it superior to TPO or adhered EPDM. The only downfall to this roofing system is that if a leak develops water can travel under the membrane and insulation, making it difficult to locate, but the manufacturer's warranty should cover such repairs for up to 20 years.

Brian and I are currently working on gathering multiple prices to pursue the installation of the ballasted EPDM system and will also inquire about pricing on the 411 building which also has many leaks.