MEMORANDUM

TO: MAYOR GATT AND CITY COUNCIL MEMBERS

FROM: CLAY J. PEARSON, CITY MANAGER

SUBJECT: NORTHWEST QUADRANT RING ROAD

DATE: APRIL 26, 2012

4/26/2012
To: Mayor and City Council members
For your review and use at Budget meeting #2 on May 2.
Clay

Following-up to the April 14 budget meeting, we were asked to provide additional background on the NW Quadrant ring road project connecting Novi Road to Grand River Avenue, extending existing Crescent Boulevard. Specifically, the attached memorandum from Rob Hayes describes previous studies regarding the need and affirming the benefits of eventual completion. We also describe the construction phasing options. The most sensible phasing option, if the City Council is willing, is to add back $140,000 from the Drain Fund for storm water work south of Grand River Avenue that is required for the road completion. There had been a motion to keep $180,000 for engineering before we recognized that was for construction engineering, so I believe that this additional step forward is in keeping with the Council discussions.

Making further progress in FY 2012/13 towards the completion with that storm water work commitment is what Rob recommends, and I fully support. There are many more important immediate objectives in this budget and in gaining consideration of the road millage question for the betterment of the City. We can come back to the balance of the construction at any time. In the meantime, we will continue pursuing funding options in addition to the available City funds for this improvement.

For budget meeting #2 that is scheduled for Wednesday, May 2, I suggest that the City Council first convene in executive session at 7 p.m. and then have the open session scheduled at 7:30 p.m. for special meeting on the budget. There would be two items. One, to finish the only open issue from the first budget session, the NW Quadrant Ring Road, at which time I am recommending the $140,000 mentioned above. Second, to discuss any (road) millage questions to put to voters for consideration in the future.

c: Maryanne Cornelius
Tom Schultz
Victor Cardenas
Rob Hayes
Kathy Smith-Roy

MEMORANDUM

TO: CLAY PEARSON, CITY MANAGER

FROM: ROB HAYES, DPS DIRECTOR/CITY ENGINEER

SUBJECT: PHASE II - NORTHWEST QUADRANT RING ROAD PROJECT

DATE: APRIL 25, 2012

At its April 14, 2012 budget meeting, City Council removed funding for Phase II of the Northwest Quadrant Ring Road (also known as the Crescent Boulevard extension project) from the proposed FY12/13 budget. To date, the City of Novi has expended over $667,000 toward the completion of the overall project, as depicted on the attached cost table. This amount does not include the $402,623 of Federal grant revenue spent in the 1990s, or the approximate $24,000 spent annually to maintain temporary easements for the project (as discussed in a separate memorandum from the City Attorney). This investment has resulted in significant progress in terms of planning, design, and Phase I construction to help bring the overall project to fruition.

Construction /design/ easements $, not including legal and land acquisition.

As requested at the April 14th budget meeting, this memorandum provides additional background information regarding the need for the project and discusses other options Council may wish to consider to potentially fund portions of the project in FY12/13 and in future years.

Previous Study Recommendations

Since 2007, two different studies commissioned by the City have recommended that a ring road be constructed at the northwest quadrant of Novi Road and Grand River Avenue. The 2007 *Scoping Study for the Northwest Quadrant Novi Road and Grand River Avenue Ring Road* prepared by Anderson Eckstein & Westrick (AEW) recommended construction of the project primarily on the basis of reducing congestion and improving traffic circulation in the area. The Corradino Group's 2011 *Novi and Wixom Transportation Improvement Plan* based its recommendation for the project on improving traffic safety because the ring road would provide an immediate countermeasure to the intersection's high crash rate. (Both reports may be viewed at the Reference Library: http://cityofnovi.org/Resources/ResourcesHome.asp.)

Specifically, AEW's 2007 study noted that the new road would:

1. Decrease congestion and delay throughout the area, especially at the Novi Road/Grand River intersection.
2. Provide a positive economic impact due to decreased congestion and improved traffic circulation through the area.

3. Reduce traffic enforcement issues due to a decrease in driver frustration, which in turn should lead to a decrease in crashes.
4. Improve air quality due to a reduction in vehicular delay and idling.

In addition to congestion caused by the intersection's geometry (i.e., the acute angle that Grand River forms with Novi Road, which makes westbound turns for large trucks difficult and slow), the fact that there is not a dedicated right turn lane for southbound Novi Road means that the ring road would provide an immediate benefit by diverting traffic that would otherwise continue to exacerbate congestion while queuing to turn onto westbound Grand River. This is significant because of the 45,000 vehicles that use this intersection each day, the southbound leg experiences substantially more demand than the other three. Based on recent intersection traffic counts provided by RCOC in December 2011 (post-Novi Road Link construction), 33% of all vehicles travel southbound compared to 24% for northbound, 23% for westbound, and 20% for eastbound traffic. According to the 2007 study, southbound flow is at or near capacity; therefore constructing the ring road would improve the level of service for southbound traffic during the PM peak period from a current average 55-80 second delay to a 35-55 second delay.

The 2011 *Novi and Wixom Transportation Improvement Plan* stated that for data analyzed from 2007 through 2009, the Novi/Grand River intersection had "a crash rate of 2.79 crashes per one million vehicles that enter the intersection," and that this rate is "more than double the metropolitan Detroit average crash rate of 1.14 crashes" per one million vehicles. In addition, Birchler-Arroyo's January 2012 *Identification of High-Crash Intersections* report indicated that the Novi/Grand River intersection had the second highest crash rate in the City of Novi for the period 2006-2010. These findings are significant because the 2011 Corradino study indicated that the majority of crashes (71%) were rear-end crashes, and most of those (51%) occurred with southbound Novi Road traffic. Rear-end crashes occur in locations with a high volume of right turns mixed with through traffic. The typical mitigation for high rear-end crash rate would be a dedicated right turn lane, which is physically impossible for southbound Novi Road because of the lack of right-of-way and the proximity of the Fidelity Investments building at the northwest corner of the intersection. Acknowledging this constraint, Corradino's report went on to state that the construction of the ring road would divert southbound Novi to westbound Grand River traffic and effectively "reduce crash experience" at the intersection.

Although they have not conducted a recent formal review, Birchler-Arroyo (B-A) staff provided these comments:

- B-A supports the project and agrees that providing the option to bypass the Grand River/Novi intersection will benefit the area. Specifically, there will be an immediate benefit to traffic and a long term benefit for businesses in the area.
- B-A staff have reviewed the Wal-Mart traffic study, which shows an expected increase in traffic at the intersection. The study projects higher southbound Novi Road right turns and eastbound Grand River left turns at the intersection (600-700 peak hour trips for each turning movement). The availability of the ring road would reduce these peak hour turning movements, and likely reduce the high crash rate at this intersection.
- Echoing Corradino's report comments, Novi Road and Grand River capacities are essentially maxed-out geometrically, limiting further improvements to help mitigate future traffic issues.

- Reducing the southbound right turns from Novi Road would provide better continuity with the recently constructed 5-lane cross-section to the south because there is no dedicated southbound Novi Road right turn lane. In other words, the ring road would allow southbound through traffic to flow with fewer delays. Further, it is reasonable to expect that the increased number of through vehicles in the southbound right turn/through lane (which now continues for another mile to the south) will likely lead to an even higher crash rate at the intersection because of the comingling of the through and right turning traffic.

To summarize, despite the improvements to Novi Road (between Grand River and Ten Mile) and Grand River Avenue (west of Novi Road) completed since 2004, two of the main impediments to better traffic safety and smooth traffic flow still exist and cannot be changed directly: the geometry of the intersection and the lack of a right turn lane for southbound traffic. Based on the professional opinions of three different engineering firms, constructing the Northwest Quadrant Ring Road would ameliorate both of these conditions and result in improved traffic safety and reduced traffic congestion.

Options

In lieu of removing the project's entire funding amount from the proposed FY12/13 budget, there are other options available that would keep it a viable project. The following sections present different alternatives and discuss the advantages, disadvantages and costs associated with each. Any one of these options could be constructed in a single construction season.

Option 1: Construct North Component Only (See Cross-Hatched Area of Figure 1).

Scope: Construct new roadway from the terminus of Phase I to the industrial spur road intersection, construct bridge and industrial spur road.

Cost estimate: $2,793,000

Advantages:

- Provides a tangible benefit by addressing the ongoing safety issues associated with traffic exiting onto Grand River from Comau Pico (traffic would exit onto Novi Road instead).
- Fulfills project necessity requirements for temporary easements from the Adell Brothers Children's Trust (does not use all of the temporary easements, but does use all of the Adell temporary easements, meaning that the City would be relieved from having to pay the approximate $24,000 annually for these easements).

Disadvantages:

- Most expensive of the three options.
- Extends the time needed for an MDEQ permit, which requires all project work be completed by the end of 2014.
- Breaking Phase II of the project into two additional phases for roadway work would increase the estimated overall project cost by $300,000. This is because three separate bid packages would need to be prepared, construction administration and inspection fee percentages are higher on smaller scale

projects, economies of scale for construction would be diminished, and three separate contractors would need to be retained – each with separate and more expensive costs for general conditions (i.e., each option's fixed costs, such as project mobilization, demobilization, bonds, insurance, etc.).

Option 2: Construct the South Component Only (See Cross-Hatched Area of Figure 2).

Scope: Construct new roadway from Grand River Avenue to the industrial spur road intersection, construct industrial spur road, and install a new traffic signal at the Grand River intersection.

Cost estimate: $1,348,000

Advantages:

- Provides a tangible benefit by addressing the ongoing safety issues associated with traffic exiting onto Grand River from Comau Pico (traffic would exit onto Grand River Avenue instead).
- Fulfills project necessity requirements for some of the temporary easements from the Adell Brothers Children's Trust (does not use all of the temporary easements, but does use two of the five Adell temporary easements).
- Less expensive than Option 1, primarily because it does not include the bridge.

Disadvantages:

- Extends the time needed for an MDEQ permit, which requires all project work be completed by the end of 2014.
- Breaking the project into two additional phases for roadway work will increase the estimated overall project cost by $300,000.
- Relieves only a portion of the $24,000 annual cost required to maintain temporary easements granted by the Adell Brothers Children's Trust.

Option 3: Construct Downstream Floodplain Mitigation Improvements (See Improvement Locations south of Grand River on Figure 3). The eventual construction of the ring road's bridge will affect downstream hydraulics, so work to address changed conditions along the Middle Rouge River downstream of Grand River Avenue will need to be done to mitigate floodplain impacts.

Scope: Remove abandoned triple culverts from the river, remove existing culvert at lower crossing and construct a new crossing at Flint Street just west of Novi Road by installing a larger, single box culvert.

Cost estimate: $140,000

Advantages:

- Provides a tangible benefit by addressing downstream flooding concerns that would be caused by the eventual construction of the upstream bridge.
- Least expensive of the three options; would be funded solely from Drain Fund.

Disadvantages:

- Does not fulfill any of the project necessity requirements of the temporary easements from the Adell Brothers Children's Trust.
- Extends the time needed for an MDEQ permit, which requires all project work be completed by the end of 2014.

Recommendations

Based on the project's technical merits and the benefits that the City would receive in terms of improved public safety and congestion mitigation, I recommend that Phase II of the Northwest Quadrant Ring Road remains a viable project by funding Option 3 (Downstream Floodplain Mitigation Improvements) in FY12/13.

Please let me know if you have any questions, comments or concerns regarding this topic.

cc: Victor Cardenas, Assistant City Manager
Kathy Smith-Roy, Finance Director
Brian Coburn, Engineering Manager
Ben Croy, Civil Engineer
Tom Schultz, City Attorney
Rod Arroyo, Birchler-Arroyo Associates
David Evancoe, Road Commission for Oakland County

PROJECT CHRONOLOGY

The following list of key events and activities provides background information relating to the ring road project:

1980s: The 1980 City of Novi Master Plan's Thoroughfare Plan showed the ring road concept at the intersection of Novi Road and Grand River Avenue.

In 1984, a ring road serving all four quadrants of the Novi Road/Grand River Avenue intersection was evaluated as part of a study commissioned by the City.

1990s: The City of Novi received a Michigan Transportation Economic Development Fund Category "A" (TEDF-A) grant for construction of the Northwest Quadrant Ring Road.

Wetland mitigation area off of West Park Drive constructed for multiple projects (future Crescent Blvd Extension, Taft Road, Novi Road, Meadowbrook Road, Decker/12 Mile Road, and other future projects).

1999: The TEDF-A grant was rescinded due to delays in ROW acquisition.

2006: Court ordered a "Stipulated Order Transferring Property and Disbursing Estimated Just Compensation" for the various property interests, including temporary construction easement areas.

2007: Scoping Study completed for the Northwest Quadrant Ring Road to update the design prepared in the 1990s and provide a current construction cost estimate.

2009: URS awarded engineering design for Northwest Quadrant Ring Road project.

Extended Adell easements two years until July 11, 2011. The City agrees to pay $24,442 per year to hold temporary easements, and to pay defendants' attorney fees.

Name Changed from Fonda Drive to West Crescent Blvd

2010: 95% design completed for entire Northwest Quadrant Ring Road project.

MDEQ Permit approved for entire project (permit expires 3/1/2015).

2011: Phase I construction completed.

Extended Adell easements an additional two years until July 11, 2013. The City continues to pay $24,442 per year to hold temporary easements, and pays defendants' attorney fees.

2012: Tree clearing for most of remainder of project completed in February.

Northwest Quadrant Ring Road Project Costs
(Through March 31, 2012)

Vendor	Scope	Cost
Anderson Eckstein & Westrick	Project Planning	$ 41,344
URS Corporation	Project Design	$ 241,326
Tiseo, Inc.	Phase I Roadway Construction	$ 364,524
Asplundh	Tree Removal	$ 16,907
G2	Geotechnical	$ 3,100
PSI	Geotechnical	$ 5,593
	Total:	**$ 667,201**

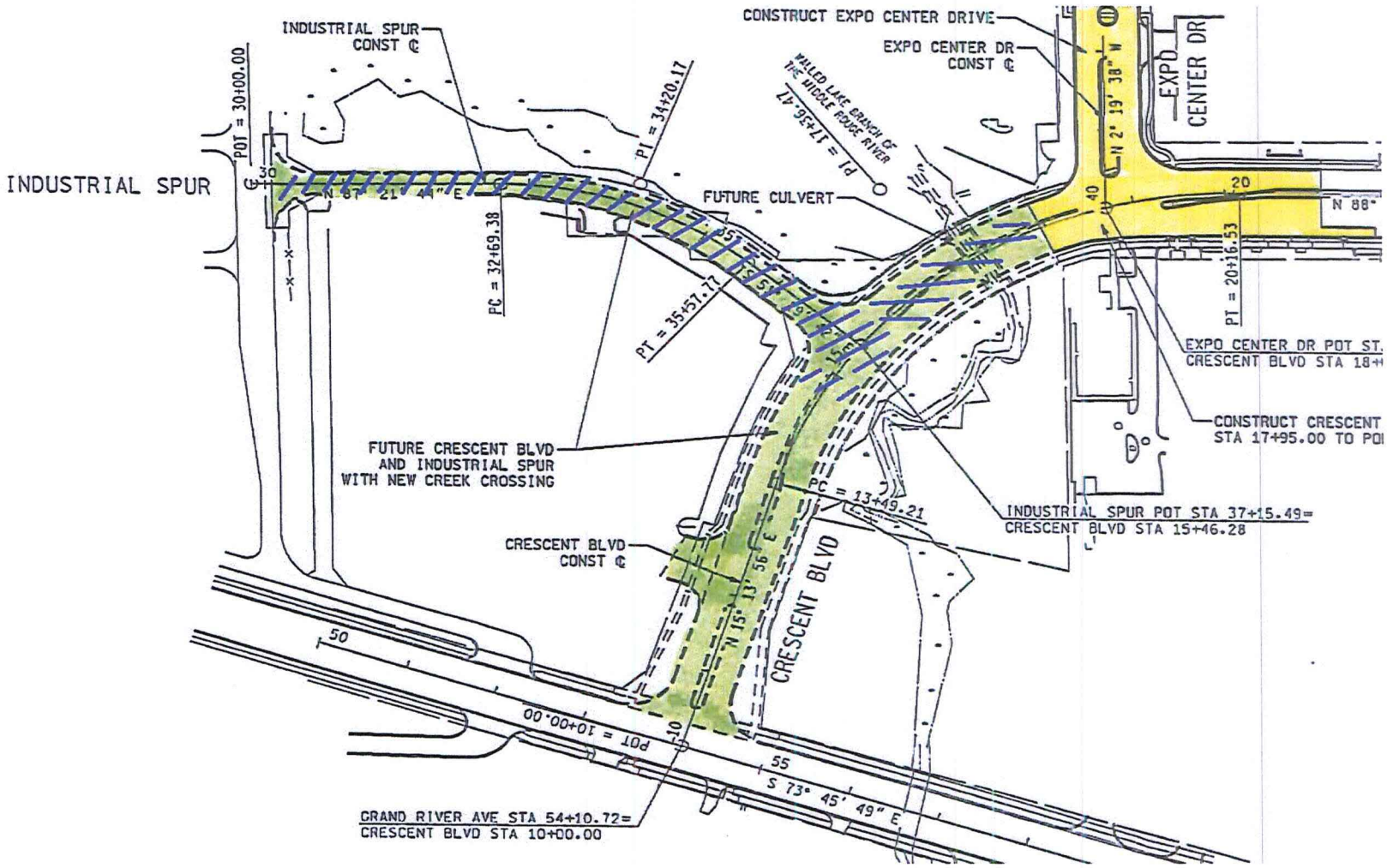

Figure 1 – Option 1

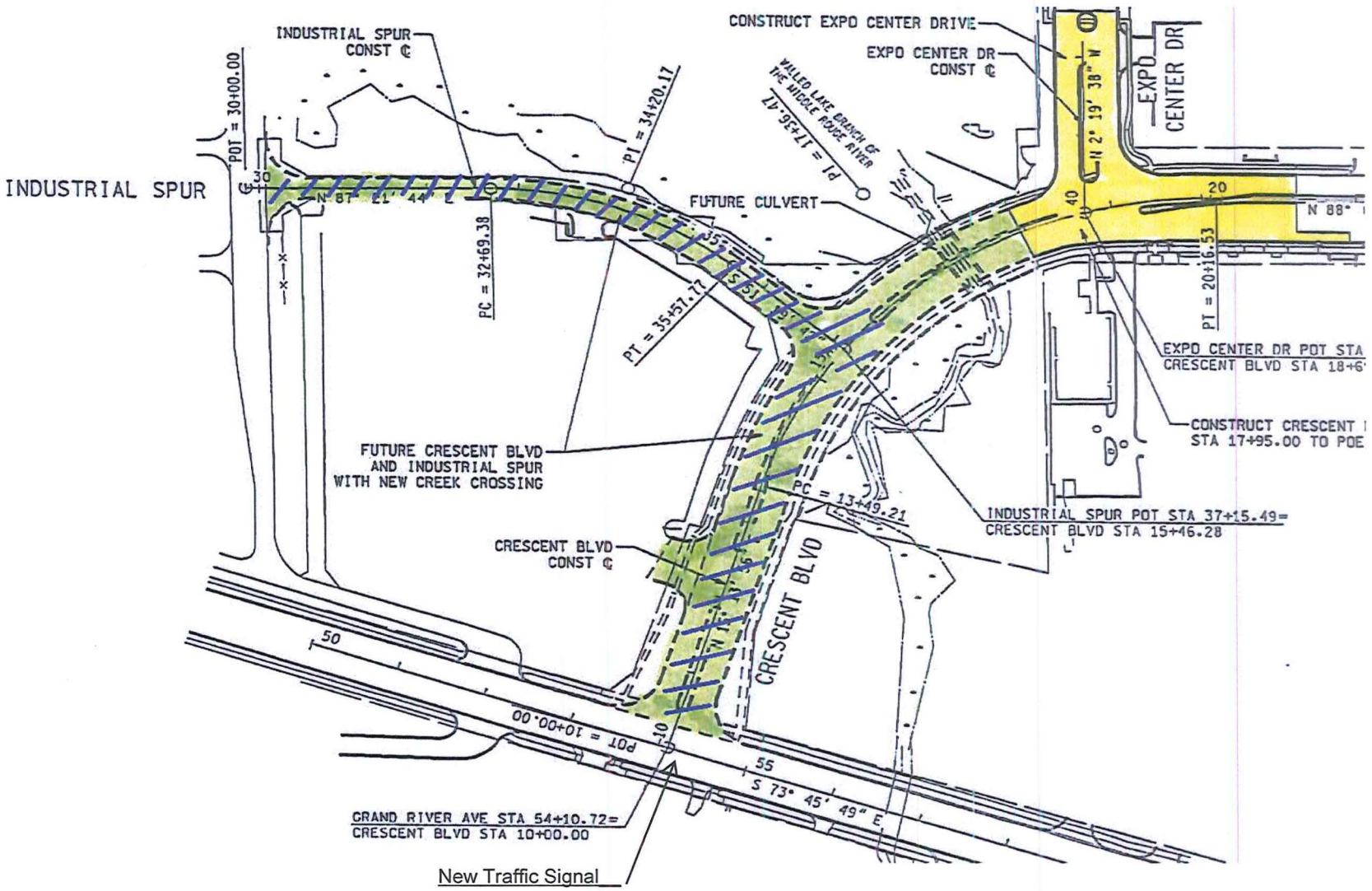

Figure 2 – Option 2

Figure 3
Downstream Hydraulic Improvements
(Option 3)

CITY OF NOVI
ENGINEERING DEPARTMENT

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FEET
1 INCH EQUALS 500 FEET

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