City of Rochester Dept of Public Works

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Memo

To: Planning Board

From: Peter Nourse, City Engineer

CC: Michael Behrendt, Chief Planner

Date: 26 March, 2012

Re: Chamberlain Investment Subdivision Suitability for Acceptance

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Existing Conditions

Anderson Lane exhibits settling along much of its length in the form of rutting wheel channels. They are most pronounced following a rain. It also exhibits an 800 foot long longitudinal crack. The crack is wide and has expanded in width over the winter. The crack may be due to inadequate tacking of asphalt course passes.

Some curbing has rotated due to inadequate concrete backing. The condition of the concrete backing is poor. In addition, much of the mortar between curbing units has fallen out.

There are areas of settlement at several structures in the streets. This may be a result of inadequate local compaction around structures and/or inadequate materials.

Sidewalks: There exist approximately 1550 feet of asphalt sidewalks on Collins and Givens Circles. They are wavy in profile and the cross slopes are extreme. They are in no way ADA compliant. The sub base material is suspect and/or the degree of workmanship.

Timeline 2012

On 23 January I contacted the engineering firm, Jones and Beach and requested specific construction files on the road construction. Additionally, I requested they provide a plan to investigate the sub-base of the road and sidewalks using an independent testing source.

On 15 February, Jones Beach responded to my request by email. They provided qualitative construction reports from 2007 that were apparently sent to the City Engineer at the time. The reports however did not contain references to quantitative analysis of construction materials, e.g. compaction tests, sieve tests, asphalt batch specifications, etc. as per my request. These reports are signed by Jones Beach, however they do not contain DPW signatures and do not exist in DPW project files.

On March 5th, John Turner Consultants (City's independent testing consultant) met on site to examine the conditions of the Chamberlain Investment property. The agreement was that the quality of roads in particular Anderson Lane and the sidewalks of Collins and Givens Circles were poor.

On 16 March, Brad Jones of Jones Beach Engineers and I walked the site. We discussed possibilities of reclaiming the part of Anderson Lane which contains the crack and local structure settlement and performing sub base analysis of the rest of the road. Mr. Jones argued that the waviness of the sidewalks could be corrected with additional asphalt to which I disagreed. Mr. Jones indicated that he agreed with the reclaim and testing approach for Anderson Lane but would have to discuss with the builder. As of this date I have not heard back from him.

Conclusion

The roads of the Chamberlain Investment subdivision are not ready for acceptance. In their 28 November surety reduction request, Jones Beach proposed the addition of final wear course pavement without rectifying the existing problems. They maintained that the sidewalks could be fixed simply by adding more pavement on top. Cracks and inconsistencies will eventually make their way to and through a wear course if conditions are not corrected below. Sub-base preparation is a special concern due to much of the property being wetlands. Adding more asphalt on top of wavy sidewalks may look good initially, but the surface will eventually conform to the wave pattern.

Currently, $10,000 surety remains on the off-site (Franklin St.) work. This is 4% of the original $254,000 surety on off-site work. Currently $182,500 surety remains on on-site work. This is 12% of the original on-site surety of $1,500,000. Most surety has been paid out on this project yet the quality of much of the work is poor.

Per their 28 November request, Jones Beach believes that there remains $106,080 of outstanding work. At this time it is not possible for the City to formulate an accurate surety schedule as all the corrective work is yet to be determined and agreed upon. The current City surety schedule identifies $130K of work including only the known corrective action. Independent testing may reveal conditions which may indicate that reclaim and pave operations are needed for at least Anderson Lane.

I strongly recommend that the subdivision owners be required to retain an independent testing source to propose a plan to test the sub materials of this project, and further that the owners be required to correct all deficiencies.

Fig 1. Concrete curb backing in poor condition and rotation of curbing. Cracks are a sign of inadequate compaction of sub materials.

Figs 2-3. Longitudinal crack from Franklin St. in approximately 800 feet to No. 34. The crack indicates inadequate tacking of coats. Crack will at least require saw cutting out. Layering wear course over this will result in reflective cracking in near future. Note the rutting of the road in the wheel tracks. This indicates inadequate base materials and/or compaction thereof.

Fig 4. The longitudinal crack. Note that on one side the grouping of aggregate is close whereas on the other side it is loosely spaced indicating inadequate compaction and rolling technique.

Fig 5. Pavement problems at interfaces with structures.

Fig 6. Subsidence near structures indicates inadequate materials and/or compaction thereof. Note missing cover.

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Fig 8. Low shoulder and inadequate compaction results in ponding water.

Fig 9. Sidewalk longitudinal and cross slopes are wavy and not ADA compliant. Additional pavement will not solve this problem. Sub-base material is in question.

Fig 10. Sidewalk cross-slopes way exceed 2% per code.

Figs 11-12. Franklin St. drainage structures. Negative drainage due to heaving of structures. Sub-base materials and/or degree of compaction thereof suspect.

Fig 13. Drainage ponds remain unfinished and apparently modified in configuration from drawings.