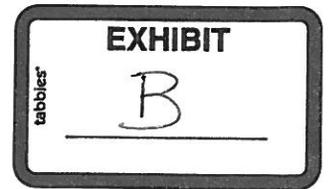


3/22/13

County Engineering and Public Works  
Consolidation Task Force

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**COUNTY ENGINEER DUTIES**

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- I don't know what you need to know, I will attempt to provide you with a overview of the duties of the office which may be statutory, self-imposed or directed thru interlocal agreements. I will present these duties in no particular order as they tend to overlap ---- SO if it appears I am rambling, it's not intentional.
  
- Let's begin with Office holder requirements;
  - must be a registered Professional Engineer and he will appoint his deputy that by statute must be a licensed Land Surveyor and will serve as the County Surveyor.
  
- **The most basic function of my office is to provide routine road maintenance and snow removal on the County Road System**
  
- What is the County road system ?
  - (a) Alll roadways that are outside the limits of the incorporated communities and are not private streets or part of the State Highway System.  
  
---and---
  - (b) All streets within the unincorporated communities and rural housing subdivisions that have been built or brought to county standards .
  
- What is the make-up of the County Road system ---

Section Line Miles : Earth = 46 Mi.  
 Gravel = 1029 Mi.  
 Paved = 241 Mi.

Total = 1386 miles

Rural County Subd. Gravel = 37 Mi.  
 Paved = 33 Mi.

- The County Road system serves a variety of functions among those functions would be access to the Recreation Lakes , we have about 38 miles of the paved road mileage that serves as access to the Lakes. This 38 miles is included in the 241 miles of county Pavement and is designated as State Recroad mileage. These Recroads were built by the State and the Counties agreed to provide the same maintenance that the rest of the County road system received. New construction like pavement overlays, seal coats would be cost shared with the State.
- There are also some county roads that were reconstructed to accomodate a "dam" . These structures in many cases that were built in cooperation and thru inter-local agreements with the NRD.
- We have also, over the years had many projects involving rail crossings within the county. These projects included New Viaducts, new at-grade rail crossing materials, signals, or signals and gates and improvements to crossing approaches. These projects involved agreements with the RTSD, State DOR and railroads.
- How is routine road Maintenance addressed within the County:
  - The County is divided into four quadrants or Districts for purposes of directing maintenance activities and handling citizen inquiries.
  - In addition: we have divided the County into 20 motorgrader districts to perform the routine blading and snow removal operations on the non-paved roads. In 1981, we had 23

districts. We have been able to reduce the number of districts to 20 as we added new paving over the years. These districts are set based upon volume and mileage. This means that busier districts would have less miles.

- We have 8 smaller 5 yd. trucks and 8 larger 10 yd. trucks that operate out of the 4 maintenance districts and aid the County in construction, gravel and dirt hauling and snow removal.
- Road Maintenance also includes other activities such as mowing, tree and brush clearing, paint striping, pavement crack sealing, erecting and removing snow fence and sign installation or replacement. Of note --- the County has responsibility for about 20,000 signs.

### ROAD AND BRIDGE CONSTRUCTION

- We are responsible for all new design and construction improvements that are done on the County Road System. This would include such items as Bridge & Culvert replacement and the regrading of the older existing roads that do not meet current standards for the traffic counts they are experiencing. Important to note -- we have also learned thru the traffic count program that we had older existing paved roads that were being subjected to counts that were to high for the paved road standards they were originally built for.
- The county is required by statute to annually hold a One & Six year road hearing to inform the public which roads and bridges are in the One year planned improvements. This hearing is also held for the public to offer testimony about roads or bridges of concern to them. It is this testimony and the traffic counts that will influence the improvements that need to be made and when they may occur.
- It was in the late 80's, that we began a program of taking traffic counts on all county roads in order to determine those

roads that need to be re-graded to meet the appropriate standards for higher counts. The counts also allowed us to develop a priority system for those eligible roads. This re-grading would also include a wider top to accommodate paving should the counts continue to increase and reach paving levels.

- The department staff also includes a Right Of Way agent and 2 - buyers to accomplish the acquisition of right of way needed to accommodate these new improvements.
- The Bridge Division includes a Bridge Engineer and 3 staff to support the bridge inspection required for both new bridges and existing. The federal government requires that an inspection and ratings be made on existing bridges every two years. We have 300 bridges, so every year we would inspect 150 bridges to rate a bridge for structural soundness and any functional deficiencies.

#### --- CITY / COUNTY INTERLOCALS

- The County has agreed that certain streets, that are presently older and unimproved, would be improved at County Cost under a new "RUTS" design standard. The benefit of this new standard is that the road is constructed as a four-lane pad today and in the future as pavement is added -- the road would not have to be closed to traffic as two existing lanes would be available while the added two lanes are constructed.
- In addition to interlocal agreements with other agencies, we have had a variety of interlocal agreements with the City of Lincoln. The following is a sample of the projects we have worked together on;

- 2/2
- Alvo road between N-1st and N-14th on the North side of Lincoln was a RUTS project that included opening a road and paving.
  - SW-40th South of 'O' Street between 'O' and 'A' streets to construct a Viaduct and pave 40th street.
  - We remain partners on the 'East Beltway for Design & ROW acquisition.
  - We cooperated with the City on dust control on S-98th Street while S-84th was being rebuilt.
  - S-98th between 'A' and 'O' Streets for Design and ROW acquisition.
  - Routine Road maintenance on gravel city streets -- We trade off on about 17 Miles on the perimeter of the city.

#### --- VEHICLE MAINTENANCE

- In the early 80's, the decision was made to replace the Old County Shop on the west end of the Harris Overpass. The old building was a wooden structure built in 1920 and was in poor shape. In addition the Sheriff had a garage to work on patrol cars on West 'O', Lomr and the Weed District had garages at other locations. The decision was made to consolidate vehicle maintenance and fueling in one location. We did not need 'O' Street frontage so we found and purchased 10 acres at Westgate Development on Sun Valley Blvd. I had four (4) mechanics on my payroll and agreed to move the Sheriffs two (2) mechanics into my department. In addition I agreed to provide a fueling station and vehicle maintenance on all County Vehicles. The County Engineers shop and the new office for the Extension agent were built in 1985. My administrative office was moved out of the Courthouse and to Westgate in 1995.

#### --- GIS DEVELOPMENT

- The development of GIS within the County began in 1988-89 with the County Surveyor collecting field survey data thru

surveying between the earth and Satelites on all section corners and quarter corners. This Surveying was referred to as GPS or global positioning system. We then spent the next 15 years collecting surveying data that would ultimately produce an XYZ coordinate for nearly 3400 section corners and quarter corners. This surveying and the coordinates obtained became the basis for the GIS system and the creation of the land base maps or ~~rectified section/plats~~

--- The preservation, maintenance, and resurrection of these section corners and quarter corners, should it be necessary is the primary responsibility of the County Surveyor.

--- **BUDGETS**

--- My department is supported by four budgets

--- General Fund --- This fund is supported by property tax and supports the administration and staff of the department and includes 35 employees.

--- GIS Land Base --- This budget was developed originally in the later 1990's as gis became more important and was used by more agencies. The intent was to be able to track county costs for GIS. This fund includes 5 employees and is supported by property tax.

--- Bridge Fund --- This fund as provided by Statute is intended to support new construction costs and fund employees that would be associated with construction. This fund includes 32 employees and is supported by property tax.

--- Highway Fund --- This fund as provided by statute is intended to support departmental maintenance costs and fund those employees associated with maintenance. This fund can also finance new construction if funds are

available. This fund has 39 employees and is supported by motor vehicle fees, registrations and the gas tax. 7

- The funding for these four (4) funds using fiscal 2012 as an example would be about \$10 million in property tax and \$6 million in gas tax.



#### IV. COUNTY ENGINEER

The County Engineer (Engineer) is the public official primarily responsible for the construction and maintenance of County roads. In Lancaster County, the Engineer is required to appoint a full-time surveyor.

The main duties of the Engineer are set forth under NEB.REV.STAT. § 23-1901 (3) (Reissue 1991), which provides that the Engineer shall:

- (a) Prepare all plans, specifications and detailed drawings for the use of the County in advertising and letting all contracts for the building and repair of bridges, culverts, and all public improvements upon the roads;
- (b) Make estimates of the cost of all contemplated public improvements, make estimates of all material required for such public improvements, inspect the material and have the same measured and ascertained, and report to the County Board whether the same is in accordance with its requirements;
- (c) Superintend the construction of all such public improvements and inspect and require that the same shall be done according to contract;
- (d) Make estimates of the cost of all labor and material which shall be necessary for the construction of all bridges and improvements upon public highways, inspect all the work and materials placed in any such public improvements, and make a report in writing to the County Board with a statement in regard to whether the same comply with the plans, specifications, and detailed drawings of the County Board prepared for such work or improvements and under which the contract was let; and
- (e) Have charge and general supervision of work or improvements authorized by the County Board, inspect all materials, direct the work, and make a report of each piece of work to the County Board.

The Engineer also has specific statutory duties which are set forth below.

### CHAPTER 23 COUNTY GOVERNMENT AND OFFICERS

#### Article 1. General Provisions (E) County Zoning

The Engineer has specific duties with regard to the approval of the subdivision of land. The Engineer must make a recommendation to the Planning Commission regarding County subdivision plats being considered by the Planning Commission. Also, the County Board may withhold approval of a subdivision plat until the Engineer has certified that the improvements required by the Lancaster County Subdivision Regulations have been satisfactorily installed or until a sufficient bond guaranteeing installation of the improvements has been posted.

#### (C) Flood Control

If the County established any flood control projects, including levies and dikes, it shall be the duty of the Engineer to keep all such flood control projects in serviceable condition and to make necessary repairs.

## **CHAPTER 39. HIGHWAYS AND BRIDGES**

### **Article 8. Bridges**

#### **(B) Contracts for Construction and Repair of Bridges**

The Engineer is responsible for keeping records regarding all bridges built and maintained by the County. Such records shall contain the date of the construction or repair, the location of the bridge in relation to the nearest section corner, and an itemized statement of all material used in the construction or repair of each bridge.

### **Article 15, County Roads. Organization and Administration**

#### **(B) County Highway Superintendent**

In Lancaster County, the Engineer serves as the County highway superintendent. The duties of the highway superintendent include:

- (1) Control and supervision of all public roads and bridges in the County under the general supervision and control of the County Board;
- (2) Remit to the County Board no later than February 1 of each year a proposed County road annual program, which includes information regarding the scheduling of construction, repair, maintenance and supervision of County roads and bridges, as well as a list of equipment and material purchases to be undertaken and carried out by the County with regard to this program;
- (3) File with the County Clerk no later than February 1 of each year a revised and current map of all county roads clearly distinguishing the primary and secondary roads and indicating any improvements made during the past year;
- (4) Undertake the projects contained in the County road annual program and report to the County Board when the projects are completed, the projects in construction, equipment and material purchased for the projects, and the amount expended upon roads and bridges and the amount remaining to be expended;
- (5) Act as the superintendent of construction of all roads, bridges, culverts, road ditch improvements, and their maintenance; and
- (6) Prior to February 1 of each year file a written annual report with the County Board detailing all work performed, funds expended, and material used for road work during the year. The report must also show the number of miles established during the year and the location of those roads, as well as the number of miles of roads established during the years and the location thereof.

### **Article 17. County Roads**

#### **(a) Land Acquisition**

The Engineer assists the County Board in making decisions regarding the acquisition of land for road purposes, and in the actual acquisition of such lands either by contract or eminent domain.

**(c) Vacation and Abandonment**

When the County Board passes a resolution that the public interest may require a vacation or abandonment of a public road of the County, the resolution shall direct the Engineer to submit in writing to the County Board within thirty (30) days a report as to whether the public road should be vacated or abandoned.

**Article 21. Functional Classification**

The Engineer prepares for County Board approval the County's Six-Year Plan of highway, road, and street improvements. The plan must be filed with the State Department of Roads by March 31st.

**Duties of the County Surveyor**

As previously mentioned, the Engineer must appoint a full-time County Surveyor. The duties of the County Surveyor are set forth under NEB.REV.STAT. § 23-1901 through 23-1913 (Reissue 1991). The principle duties of the Surveyor include perpetuation of all original section corners by setting permanent monuments in accordance with instructions from the State Surveyor, and to prepare all surveys required by law.

Specific Surveyor duties are also set forth under §§ 39-1704 through 1712 (Reissue 1993) with regard to the establishment, alteration and survey of county roads.