DEPARTMENTAL

INDIAN RIVER COUNTY, FLORIDA
MEMORANDUM

TO:	**Jason E. Brown, County Administrator**
FROM:	**Richard B. Szpyrka, P.E., Public Works Director** **Stan Boling, Community Development Director**
SUBJECT:	**Unmaintained County Roadway Analysis**
DATE:	**May 21, 2018**

DESCRIPTION AND CONDITIONS

On October 3, 2017 the Board of County Commissioners discussed the issue of unmaintained County roads. The Board discussed several options for a possible long-term policy/solution to address the current situation whereby the County does not maintain roadways that have not been physically constructed to a maintainable roadway standard and therefore are designated as unmaintained County roadways.

The Board directed staff to research the following:

- Research using MSTU/MSBU grading districts in a couple of areas of the County. Review roadway conditions and right-of-way availability to meet current County standards for low volume maintainable unpaved roadways. Provide a projected cost for providing grading services and a cost for construction of maintainable unpaved roads in locations where the roads are not currently maintained by the County.
- Partner with the Indian River Farms Water Control District (IRFWCD) to discuss the best use of road and canal right-of-way and how we can work together to allow for low volume roads to co-exist with the drainage systems.

In response, staff mapped and evaluated County right-of-way conditions, focusing on areas outside the Urban Service Area. Staff did not focus inside the Urban Service Area since a much higher level of infrastructure already exists in that area and because infrastructure deficiencies in that area are generally "cured" via development requirements borne by new development. Staff also utilized the 2004 Indian River County Unmaintained Road Planning Study (2004 Study) that was completed to address this same topic. Please note, the 2004 study stated that there is a total of 142 miles of unmaintained roadways in the County. A special thanks is extended to the GIS staff for working diligently to develop the Study Area Maps so that this analysis could be accomplished.

Staff looked at three areas of the County outside of the Urban Service Area. The following three study areas were chosen due to the pattern and concentration of unmaintained rights-of-way mixed with County maintained unpaved roadways. These areas represent the partially developed portions of the County outside the Urban Service Area.

- Study Area 1 is located south of 16th Street to the St. Lucie County line and from 58th Avenue west to 82nd Avenue. See the attached map for Study Area 1.

- Study Area 2 is located west of I-95 from SR-60 to the St. Lucie County line. See the attached map for Study Area 2.

- Study Area 3 is generally located in the unincorporated areas around Fellsmere area. See the attached map for Study Area 3.

Study Area 1

Study Area 1 consists of the following:

County Roads in Study Area 1	Total Length (Miles)	Paved	Unpaved
Paved Collector Roads and Above	12.02	12.02	
Paved Local Roads	3.6	3.6	
Right of Way, not Maintained	7.23		7.23
Maintained Unpaved Roads	20.68		20.68

Parcel Status in Study Area 1	Number of Parcels	Total Acreage	Total Acreage
Developed	922	2,709	33.85%
Undeveloped	419	5,296	66.15%
Total	1,341	8,005	100%

Based on the tables above the County currently maintains 20.68 miles of unpaved roadways in Study Area 1. The County wide annual operating cost per mile for a grader is $3,129. This equates to a cost of $64,707 per year (20.68 x $3,129) for a grader to operate in Study Area 1. If the County was to construct maintainable unpaved roadways within the 7.23 miles of unmaintained rights-of-way, the yearly cost for maintenance would be $87,330 (27.91 x $3,129) for a grader to operate within Study Area 1.

Unpaved roads require additional stabilized material to be added yearly as part of the grading and maintenance process. On average, approximately seven (7) truckloads of stabilized material are added to each mile of an unpaved road on a yearly basis. That equates to approximately 144 truckloads of material in Study Area 1 at a cost of $165 per load or $23,760 per year (20.68 x $165). The total cost for operation and maintenance of the existing County maintained unpaved roadways in Study Area 1 is $88,467 per year.

The cost for operation and maintenance of all 27.91 miles of unpaved roadway is $119,566. (Please note that this does not include the cost for the initial construction required for the 7.23 miles of currently unmaintained roadways.) Utilizing the table above, the baseline cost for maintaining 27.91 miles of unpaved roads within Study Area 1 is $14.93 per acre or $89.16 per parcel. If an MSTU or MSBU district were established, a per acre cost of $14.93, or fraction thereof, appears to be the logical choice.

As an example within this study area is 13th Street SW, a one-mile segment of unmaintained roadway located between 58th and 66th Avenues. This sample segment of roadway is within a 60-foot right-of-way split into two sections, one is a 30-foot wide County right-of-way and the second is a 30-foot IRFWCD drainage right-of-way. The roadway segment is approximately 5,280 feet in length. Based on current construction costs, construction of a maintainable unpaved roadway for this roadway segment would be approximately $65.00 a linear foot or $343,200 to construct, with an additional $60,000 for survey, design, and permitting, for a total cost of $403,200 per mile or $76.36 per linear foot of unpaved roadway. That assumes the existing IRFWCD ditch will not need to be enclosed, that there is sufficient right-of-way to construct an 18-foot wide maintainable unpaved roadway segment with a minimum four-foot clear zone on both sides of the roadway, and that agreements can be reached with adjacent property owners so that stormwater runoff can be directed onto private property. It should be noted that this particular segment of roadway has a unique issue as a portion of the IRFWCD ditch was not constructed within the 30-foot drainage right-of-way. It was constructed on the centerline of the right-of-way, which will require the ditch to be relocated to the south in order to construct the roadway or purchase right-of-way. This additional cost has not been established and is not reflected in the per linear foot cost above.

As was the case in the 2004 Study and is still the case today, there is not sufficient right-of-way on a majority of the unmaintained roadways to construct maintainable unpaved roadways with the proper stormwater treatment systems. Per the Indian River County Code of Ordinances, Title IX, Land Development Regulations, Chapter 952, Traffic, Section 952.08, Right-of-Way requirements, the minimum required right-of-way for a roadway with swales is 60-feet wide. See the attached cross-section exhibits from the 2004 Study for different conditions.

There are thirteen parcels that have frontage on this sample roadway segment of 13th Street SW. However, only nine property owners would benefit from establishing an MSBU. The total frontage on this sample roadway segment is approximately 10,560 linear feet. However, four parcels, having approximately 4,700 linear feet of frontage, do not access from 13th Street SW. As such, these four parcels have not been included in the estimated linear footage cost for construction. Nine property owners having access from this roadway segment have approximately 5,860 linear feet of frontage. Assuming a per foot cost of frontage on 13th Street SW, the cost over a 10-year period would be $6.88 per linear foot. This does not include any finance charges or administration costs for the MSBU process. For example, one property owner has approximately 650 linear feet of frontage on 13th Street SW. The yearly cost for a 10-year period to this property owner would be $4,472 or $44,720 for a ten-year period, plus fees.

In Study Area 1 there is approximately 7.23 miles of unmaintained County rights-of-way. Based on the per linear foot cost of $76.36 for design/construction of a unpaved roadway as established above, the cost to construct 7.23 miles of unpaved roadway within Study Area 1 is $2,914,997. That is a basic construction cost and it is assumed that the existing IRFWCD canals will not need to be enclosed or relocated, that there is sufficient right-of-way to construct a 18-foot wide unpaved roadway with a minimum four foot clear zone on both sides of the roadway, and that agreements can be reached with adjacent property owners so that stormwater runoff can be directed onto private property.

Currently, construction costs for a new paved roadway is approximately $190 to $350 per linear foot depending on circumstances and conditions. It should also be noted that 14-years ago in the 2004 Indian River County Unmaintained Road Planning Study, the cost for a linear foot of unpaved roadway was noted to be $37.00 per linear foot and $100 per linear foot for paved roadway. The cost for construction of maintainable unpaved roadways are for outside contractors to bid and construct any unpaved roadways through the County Procurement process.

Study Area 2

Study Area 2 consists of the following:

County Roads in Study Area 2	Total Length (Miles)	Paved	Unpaved
Paved Collector Roads and Above	0.26	0.26	
Paved Local Roads	0.14	0.14	
Right of Way, not Maintained	17.71		17.71
Maintained Unpaved Roads	15.68		15.68

Parcel Status in Study Area 2	Number of Parcels	Total Acreage	Total Acreage
Developed	62	1,479	21.63%
Undeveloped	130	5,357	78.37%
Total	192	6,836	100%

Based on the tables above the County currently maintains 15.68 miles of unpaved roadways in Study Area 2. The County wide annual operating cost per mile for a grader is $3,129. That equates to a cost of $49,063 per year for a grader to operate in Study Area 2. If the County was to construct maintainable unpaved roadways within the 17.71 miles of unmaintained rights-of-way, the yearly cost for maintenance would be $104,477 (33.39 x $3,129) for a grader to operate within Study Area 2.

As was the case in Study Area 1, approximately seven (7) truckloads of stabilized material are added to each mile of an unpaved road on a yearly basis. For Study Area 2 that equates to approximately 110 truckloads of material at a cost of $165 per load or $18,150 per year. The total cost for operation and maintenance of County maintained unpaved roadways in Study Area 2 is $67,213 per year.

The cost for operation and maintenance of all 33.39 miles of unpaved roadway is $143,042. (Please note that this does not include the cost for the initial construction required for the 17.71 miles of currently unmaintained roadways.) Utilizing the table above, the baseline cost for maintaining 33.39 miles of unpaved roads within Study Area 2 is $20.92 per acre or $745.01 per parcel. If an MSTU or MSBU district were established, a per acre cost of $20.92, or fraction thereof, appears to be the logical choice.

There is approximately 17.71 miles of unmaintained County right-of-way within Study Area 2. Based on the per linear foot cost of $76.36 for the construction of a maintainable unpaved roadway as established in Study Area 1 above, the cost to construct 17.71 miles of maintainable unpaved roadway within Study Area 2 is $7,140,331. That is a basic construction cost and it is assumed that the existing IRFWCD canals will not need to be enclosed or relocated, that there is sufficient right-of-way to construct a 18-foot wide unpaved roadway with a minimum four foot clear zone on both sides of the roadway, and that agreements can be reached with adjacent property owners so that stormwater runoff can be directed onto private property.

Study Area 3

Study Area 3 consists of the following:

County Roads in Study Area 3	Total Length (Miles)	Paved	Unpaved
Paved Collector Roads and Above	5.28	5.28	
Paved Local Roads	1.07	1.07	
Right of Way, not Maintained	29.20		29.20
Maintained Unpaved Roads	39.73		39.73

Parcel Status in Study Area 3	Number of Parcels	Total Acreage	Total Acreage
Developed	687	4,214	46.00%
Undeveloped	575	4,947	54.00%
Total	1,262	9,161	100%

Study Area 3, the unincorporated area of Fellsmere, is unique with respect to the ownership of the right-of-way. The Fellsmere Water Control District (FWCD) is the underlying owner of a majority of the rights-of-way where drainage canals and canal maintenance roads are located within the unincorporated area of Fellsmere. The County entered into an agreement with the FWCD in 1975 to maintain, via grading, certain canal maintenance roadways within the FWCD. The Agreement was amended twice to add canal maintenance roadways to the County grading route. At this time, the County grades approximately 39.73 miles of canal maintenance roads within the Fellsmere Study Area.

Based on the tables above the County maintains 39.73 miles of unpaved roadways in Study Area 3. The County wide annual operating cost per mile for a grader is $3,129. This equates to a cost of $124,315 per year for a grader(s) to operate in Study Area 3.
As was the case in Study Area 1, approximately seven (7) truckloads of stabilized material are added to each mile of an unpaved road on a yearly basis. For Study Area 3 this equates to approximately 278 truckloads of material in this study area at a cost of $165 per load or $45,870 per year. The total cost for operation and maintenance of the existing list of County maintained unpaved canal maintenance roadways in Study Area 3 is $170,185 per year.

It should be noted that the above yearly number does not include the 514 loads of stabilized material that were added to the 10 miles of previously unmaintained roadways that were absorbed into the Fellsmere grading route in FY 16-17.

The cost for operation and maintenance of all 68.93 miles of unpaved roadway is $295,295. (Please note that this does not include the cost for the initial construction required for the 29.20 miles of currently unmaintained roadways.) Utilizing the table above, the baseline cost for maintaining 68.93 miles of unpaved roads within Study Area 3 is $32.23 per acre or $233.99 per parcel. If an MSTU or MSBU district were established, a per acre cost of $32.23, or fraction thereof, appears to be the logical choice.

In Study Area 3 there is approximately 29.20 miles of unmaintained FWCD drainage rights-of-way within this study area. Based on the per linear foot cost of $76.36 per linear foot for the construction of a unpaved roadway as established in Study Area 1 above, the cost to construct 29.20 miles on unpaved roadway within Study Area 3 is $11,772,879. That is a basic construction cost and does not address the need for the acquisition of right-of-way, culverting of existing canals, or stormwater treatment and drainage.

Staff is requesting the Board consider the following options and provide direction to staff.

- **Option #1** – Establish an MSTU or MSBU in 1, 2, or 3 of the study areas to fund existing roadway maintenance; add new County maintained roadway segments by extending the petition paving/milling process to unpaved roadways with construction costs funded by assessment (75% benefited property owners – 25% County) and maintenance funded by the MSTU or MSBU. (75%/25% split)

- **Option #2** – Establish an MSTU or MSBU in 1, 2, or 3 of the study areas to fund existing roadway maintenance and a multi-year expansion program to construct and maintain new County maintained roadway segments.

- **Option #3** – Continue existing roadway maintenance as currently funded by the Transportation Fund: add new maintainable unpaved roadway segments by extending the petition paving/milling process to unpaved roadways with construction costs funded by assessment of 75% of the cost to the benefited property owners and 25% contributed from the Transportation fund. After construction is completed, the maintenance is to be funded by the Transportation Fund.

- **Option #4** – Continue maintaining roadways in the current fashion and do not add additional unpaved roadway segments to the current maintenance routes.

FUNDING

Funding for improvements would depend upon the option selected. Once an option is selected and a cost estimate determined, a funding plan will be submitted to the Board.

RECOMMENDATION

Staff recommends Option #3.

ATTACHMENTS

Study Area Maps
Cross-section Exhibits from the 2004 Study

APPROVED AGENDA ITEM FOR June 12, 2018