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Comprehensive Projects and NCTCOG Specifications

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NCTCOG Public Works Roundup
September 2, 2021

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Comprehensive Neighborhood Projects Process

- What is a Comprehensive Neighborhood Project?
- Project Selection Tools
- Selection Process
- Benefits of Comprehensive Projects
- Project Funding
- Project Budgeting

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What is a Comprehensive Neighborhood Project?

- A project that takes all aspects of public infrastructure into account during planning, design, and construction
- Across an entire neighborhood/subdivision
- Not simply "worst-first" with regard to individual assets



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Project Selection Tools

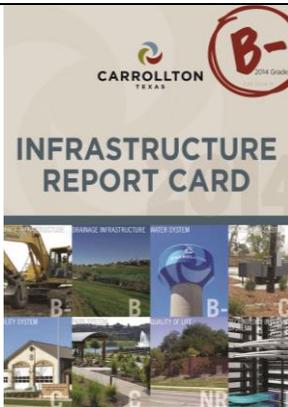
- Scoring Carrollton's Infrastructure Maintenance (SCIM) Report
- Infrastructure Management System (IMS) Data
- NOTICE Program



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Scoring Carrollton's Infrastructure Maintenance (SCIM) Report

- Comprehensive assessment of current and future conditions of public infrastructure
- Highlights funding needs and planned projects
- Report updated after new IMS is received (2023)

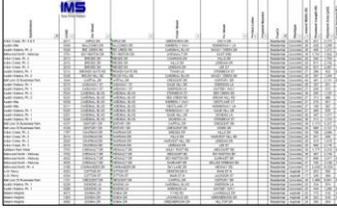


The report card cover features the Carrollton Texas logo and a large 'B-' grade in a red circle. Below the title 'INFRASTRUCTURE REPORT CARD', there are several small images representing different infrastructure systems: Sewer System (B), Stormwater (B), Solid Waste (B), and another category (C). The logos for IAN and Carrollton Texas are at the bottom left.

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Infrastructure Management System (IMS) Data

- Streets and alleys mapped every 5 years and given Pavement Condition Index (PCI) scores
- Over 6,100 street and alley segments
- Data is broken down into subdivisions
- List of worst-rated subdivisions generated



The screenshot shows a data table with the following columns: Subdivision, Street Name, Segment ID, Pavement Condition Index (PCI), and other metrics. The table lists numerous subdivisions and their corresponding street segments with their respective PCI scores.

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NOTICE Program

- Neighborhood-Oriented Targeted Infrastructure & Code Enforcement
- Comprehensive infrastructure repair/replacement
- Concerted Code Enforcement effort
- CDBG Eligible



The slide features a map of Carrollton, Texas, with various colored zones (red, blue, green, yellow, purple) indicating different areas of focus for the NOTICE Program. The map shows a grid of streets and several colored blocks. A small logo is visible in the bottom right corner of the map area.

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Selection Process

- Utilize selection tools to generate initial proposed projects list
- Get input from Public Works, GIS, and other city-side stakeholders
- Use proposed bond budget to refine list
- Capital Improvements Plan Advisory Committee (CIPAC)
- City Council



The slide includes a photograph of a residential street. The sidewalk in the foreground is cracked and damaged. A white pickup truck is parked in a driveway on the right side of the street. The background shows houses and trees under a clear sky.

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Benefits of Comprehensive Projects

- Get entire subdivision on similar life-cycle
- Improve future bond planning
- Enable Public Works proactivity

City of Carrollton, Texas
Age of Residential Subdivisions by Decade

1950s & earlier
1960s
1970s
1980s
1990s & 2000s

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Project Funding

- Bonds
- Ad Velorum Tax
- Neighborhood Partnership Funds
- Community Development Block Grant (CDBG)
- General Fund (as needed)

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Project Budgeting

- Engineering Department OPCC
- Design ~8-10% of OPCC
- Testing and Overhead ~15% of OPCC
- Design Engineer's OPCC ≤ Engineering Department OPCC

ITEM	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL COST
101	Professional Fee - Design	1	1	100000	100000
102	Professional Fee - Construction	1	1	100000	100000
103	Professional Fee - Construction Administration	1	1	100000	100000
104	Professional Fee - Construction Management	1	1	100000	100000
105	Professional Fee - Construction Management - Construction	1	1	100000	100000
106	Professional Fee - Construction Management - Construction Administration	1	1	100000	100000
107	Professional Fee - Construction Management - Construction Management	1	1	100000	100000
108	Professional Fee - Construction Management - Construction Management Administration	1	1	100000	100000
109	Professional Fee - Construction Management - Construction Management Construction	1	1	100000	100000
110	Professional Fee - Construction Management - Construction Management Construction Administration	1	1	100000	100000
111	Professional Fee - Construction Management - Construction Management Construction Management	1	1	100000	100000
112	Professional Fee - Construction Management - Construction Management Construction Management Administration	1	1	100000	100000
113	Professional Fee - Construction Management - Construction Management Construction Management Construction	1	1	100000	100000
114	Professional Fee - Construction Management - Construction Management Construction Management Construction Administration	1	1	100000	100000
115	Professional Fee - Construction Management - Construction Management Construction Management Construction Management	1	1	100000	100000
116	Professional Fee - Construction Management - Construction Management Construction Management Construction Management Administration	1	1	100000	100000
117	Professional Fee - Construction Management - Construction Management Construction Management Construction Management Construction	1	1	100000	100000
118	Professional Fee - Construction Management - Construction Management Construction Management Construction Management Construction Administration	1	1	100000	100000
119	Professional Fee - Construction Management - Construction Management Construction Management Construction Management Construction Management	1	1	100000	100000
120	Professional Fee - Construction Management - Construction Management Construction Management Construction Management Construction Administration	1	1	100000	100000




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Item 108 – Prior to the start of work the CONTRACTOR is required to submit a schedule outlining the major items of work on the project. This is particularly important for reconstruction projects where the OWNER is coordinating other services – such as trash pickup or mail delivery – or to ensure access is maintained during construction, such as when you are reconstruction both the street and alley of a rear entry neighborhood. The specs provide for the

<p>Utility Work</p> <p>Pipe Materials – Item 501</p> <p>Appurtenances – Item 502</p> <p>Construction Methods</p> <ul style="list-style-type: none">→ Item 503 Trenchless→ Item 504 Open Cut - Backfill <p>Storm</p> <ul style="list-style-type: none">→ Acceptance specs/testing <p>Water / Wastewater</p> <ul style="list-style-type: none">→ Maintaining service→ Acceptance specs/testing <p> </p>	
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Item 501

- All (most, really) pipe materials are covered here. This is also where you reserve the right to reject materials that do not meet spec or arrive with defects. Acceptable repairs can be made at no cost to the owner.
- 501.7 DI Fittings – requires poly wrap (which is specified in 502.8)

Item 502

- 502.1 Manholes
 - Any type: water, wastewater, stormwater
 - 502.1.2: Riser rings include alternative materials, such as rubber and HDPE.
 - 502.1.5: Vacuum testing. Includes table of allowable pressure drops based on diameter and depth.
- 502.10 Connections to Conduit for Service
 - Saddles
 - Long / short
 - CONTRACTOR responsible to inform customer that service will be transferred.
 - Services are required to be flushed, disinfected, and tested prior to transfer.

Item 503

- 503.3.3.3 Construction by Boring
 - Well drained pit with rock floor
 - Concrete support at ends of casing and first joint of trenched pipe

Item 504

- Embedment – material from the bottom of the trench to covering the pipe.
 - 504.5.1.3.(a) outlines minimum and maximum trench dimensions. Minimum depth below pipe is important to ensure that zone in the bottom of pipe is well supported by proper embedment. Maximum trench width is important to minimize material

usage and prevent confined trench effects which can affect the structural capacity of flexible pipe.

- Compaction is as outlined for the specified embedment, which are individually specified.
- Backfill – from the cover over the pipe to the surface, or potentially subgrade/pavement
- Densities
 - Tests are required in their respective locations for embedments and backfill. This is particularly important due to the potential for differential settlement.

Item 508 - Stormwater

- 508.4.6 Reuse of Existing Headwalls. Contractor is responsible for damage during moving or resetting operations.
- 508.6.6. Pipe Testing required for plastic pipe. Mandrel or MSI.

Item 506 – Water

- 506.5 Hydrostatic Test: table of allowed leakage. Pretty standard. More owners are using HDPE by choice or material availability. At elevated temperatures, HDPE has less strength and thus is tested at a reduced pressure if it is extremely hot. A pressure derating table based on temp is included in the spec.
- Replacing water in neighborhoods can be tricky, sometimes temporary services are necessary. Where parallel lines can be constructed, the mains and services both must be disinfected/tested before switch over.

Item 507 – Wastewater

- 507.5.1.3. Low Pressure Air Testing
- 507.5.1.4.1. Mandrel

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Demo / Pavement Removal

- **Item 203 Site Preparation**
 - removal and disposal of all obstructions from the right-of-way and from designated easements
 - protection and replacement of trees, etc. covered under 201 Site Protection which includes drip line fencing for tree protection
 - material must be disposed of appropriately per 107.26
- **May be partially done as part of utility work**
- **Maintaining homeowner access**
 - Alley work and street work must typically be done separately



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Item 301 Subgrade Prep

- **Limits**
- **Establishing subgrade**
- **301.2 Lime Treatment**
 - Test to establish required amount
 - Must pass sieve test after cure
- **301.3 Portland Cement Treatment**
 - Coarse soils, high sulfates, extreme Pis
- **301.4 Asphalt Emulsion Treatment**
 - Must pass sieve test after cure
- **301.5 Flexible Base**
 - Crushed concrete allowed



Item covers subgrade, subbase, and base preparation, defined as follows:

Base: a layer of specified material of plan thickness placed immediately below the pavement course surfacing.

Subbase: a layer of specified material of plan thickness between a base and a subgrade.

Subgrade: that portion of the roadbed upon which the subbase, base or the pavement is to be placed. It includes the OWNER'S required distance beyond the back of the curb for streets, which are to be paved with concrete.

301.1 General

- 12 inches minimum subgrade prep behind back of curb.
- After removal of existing subgrades, soft spots and irregularities can be exposed. Proof rolling is included in subgrade preparation item and does not have to be paid for separately.

301.2 Lime Treatment

- 301.2.1.3 On reconstruction projects, the material you find under the existing pavement is anyone's guess. Performing the required testing to establish the amount of lime required to meet the necessary strength required for your subgrade can save money by reducing over treatment or make sure enough lime is applied to meet the required strength.
- 301.2.3.5.1 In order to eliminate chunks, a sieve test is to be performed to verify adequate mixing.

301.3 Cement Treatment

- No requirement for testing to establish application rate.
- 301.3.3.2 established sieve results necessary after mixing for the same reasons as lime treatment

301.4 Asphalt Emulsion Treatment

- No requirement for testing to establish application rate.
- 301.4.3.4.1 established sieve results necessary after mixing for the same reasons as lime and cement treatment

Paving

- **Item 302 Asphalt Paving**
 - 302.3.7 Emulsion for In-Place Recycling
- **Item 303 Portland Cement Concrete Pavement**
 - 303.3.5.5 Delivery Tickets
 - 303.5.5 Placing Concrete
 - 303.5.8 Opening Pavement to Traffic



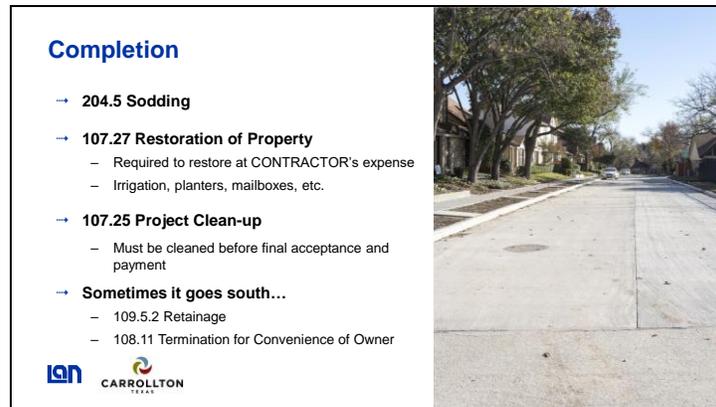
 

303.3.5.5 Delivery Tickets – required to be printed, stamped, or written. Some owners have reported receiving electronic tickets that do not accurately represent the delivered load.

303.5.5 outlines maximum time for concrete on the truck. 45 minutes above 90f, 75 minutes above 90f with retarder.

303.5.5.2 states: “Except by specific written authorization of the OWNER, no concrete shall be placed when the concrete temperature is higher than 95°F. CONTRACTOR shall take appropriate measures including chilling and reduction of time intervals between batching and placing.

303.5.8 Opening Pavement to Traffic: All traffic shall be excluded from the pavement for a period of not less than 14-days or until field cured test specimens indicate concrete meets at least 75% of design strength, or as otherwise approved by the OWNER.



Completion

- **204.5 Sodding**
- **107.27 Restoration of Property**
 - Required to restore at CONTRACTOR's expense
 - Irrigation, planters, mailboxes, etc.
- **107.25 Project Clean-up**
 - Must be cleaned before final acceptance and payment
- **Sometimes it goes south...**
 - 109.5.2 Retainage
 - 108.11 Termination for Convenience of Owner

The slide features a photograph of a residential street with a paved road, trees, and houses under a clear blue sky.

204.5 Sodding

- Includes St. Augustine, Bermuda, Buffalo, and Zoysia varieties
- Includes requirement for fertilizing per 204.4

107.25 Project Clean-up

Also states the contractor needs to keep jobsite clean on a daily basis.

109.5.2 Retainage

On all contracts in excess of \$400,000, the following shall apply:

- on all contracts in excess when work progress is 80-percent complete, retainage may, at the OWNER'S option, be reduced to two percent of the dollar value of all work satisfactorily completed to date (not to include material on hand), provided that the CONTRACTOR is making satisfactory progress and there is no cause of greater retainage as determined by the OWNER;
- when work progress is substantially complete, the retainage may be further reduced to only that amount necessary to assure completion as determined by the OWNER;
- if the OWNER determines that the CONTRACTOR is not making satisfactory progress or if there is other specific cause, the OWNER may, at its discretion, reinstate up to the five percent retainage.

108.11 Termination For Convenience Of The Owner

The performance of the work under this Contract may be terminated by the OWNER in whole or from time to time in part, in accordance with this section, whenever the OWNER shall determine that such termination is in the best interest of the OWNER.

