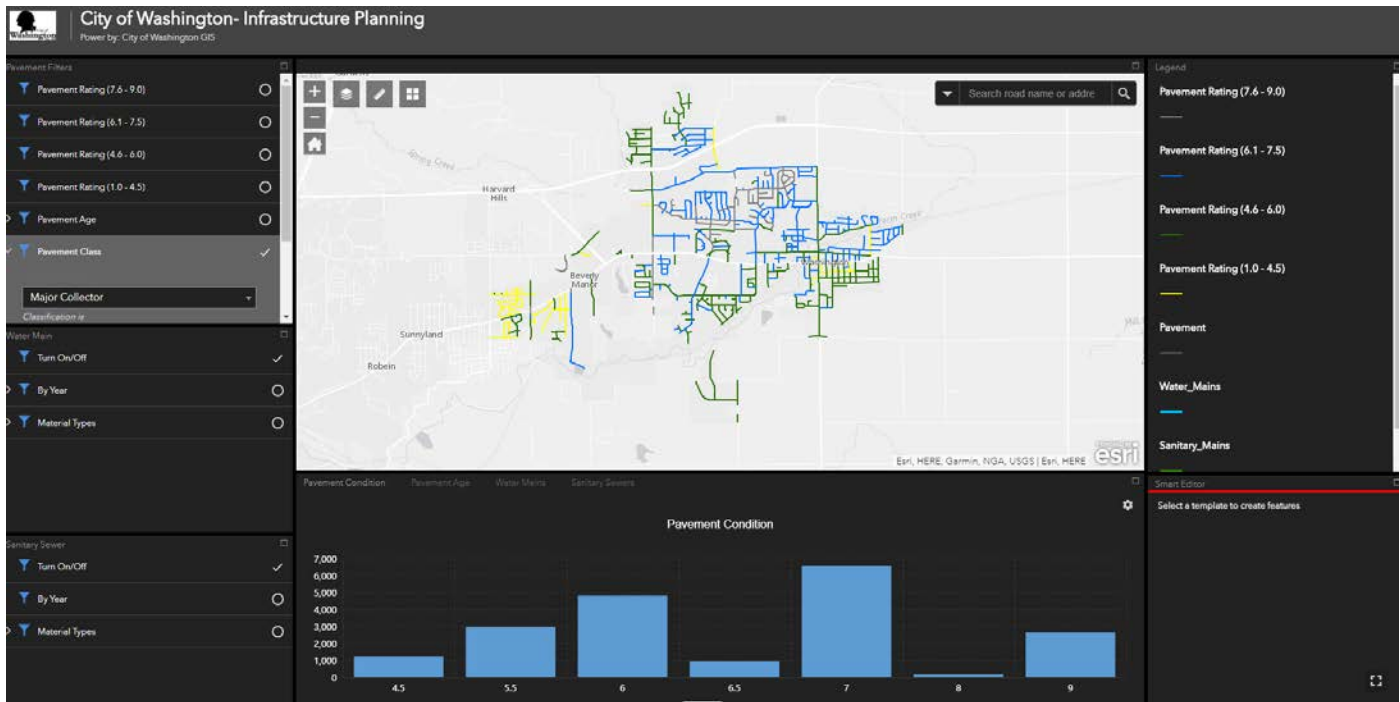




Memo

TO: Public Works Committee
FROM: Ed Andrews, Public Works Director
SUBJECT: Infrastructure Review
Special Public Works Meeting for Nov. 27-17
DATE: November 22, 2017

The following ArcGIS dashboard has been prepared to help with discussions on Monday. This will help overlay sanitary sewers and water mains based on estimated decade of construction and material type on the roadway layer, also displaying pavement condition rating and approximate age.



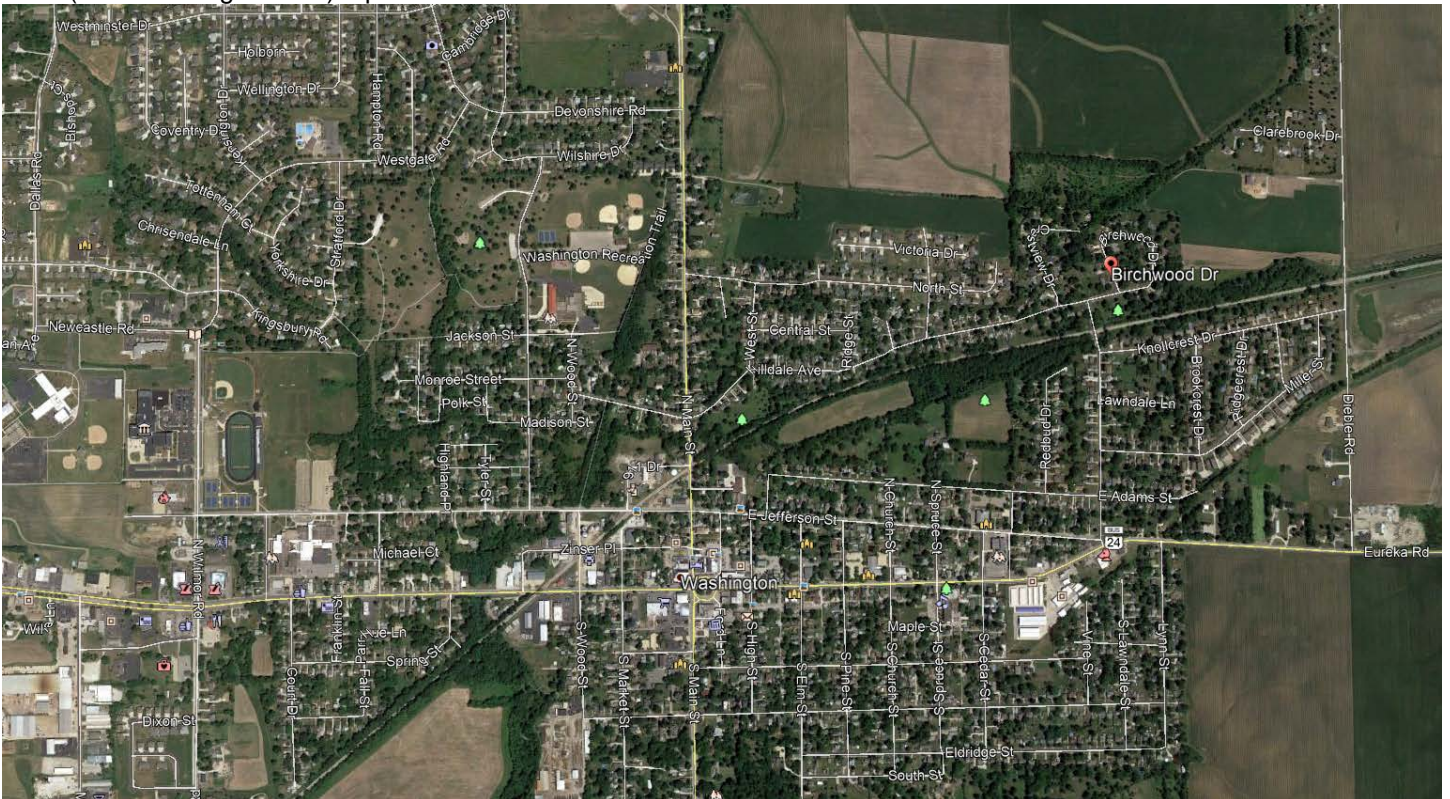
Please note that data collection and incorporation of historical data is still an ongoing process. The following page's aerial exhibits are of partial interest and value. Ideally we would be able to integrate into the GIS mapping as well.

1939 (Source ISGS) – North Half of City



Sanitary – none, private septic and clay wildcat discharge to streams, unknown?" Mi
Water Mains - 4" Cast Iron (CI); estimate 23.8mi based on current inventory.
Roadways - Unknown ratio of concrete and brick, asphalt paving industry just starting. est. 24mi
Storm – concrete and clay pipe, estimate same as current ratio of roads to storm, est. 12 mi
Bridges – 6 bridges, note: all of these, expect Candlewood, have been replaced in the last 50 years.

2016 (Source Google Earth) – partial Northeast Quad

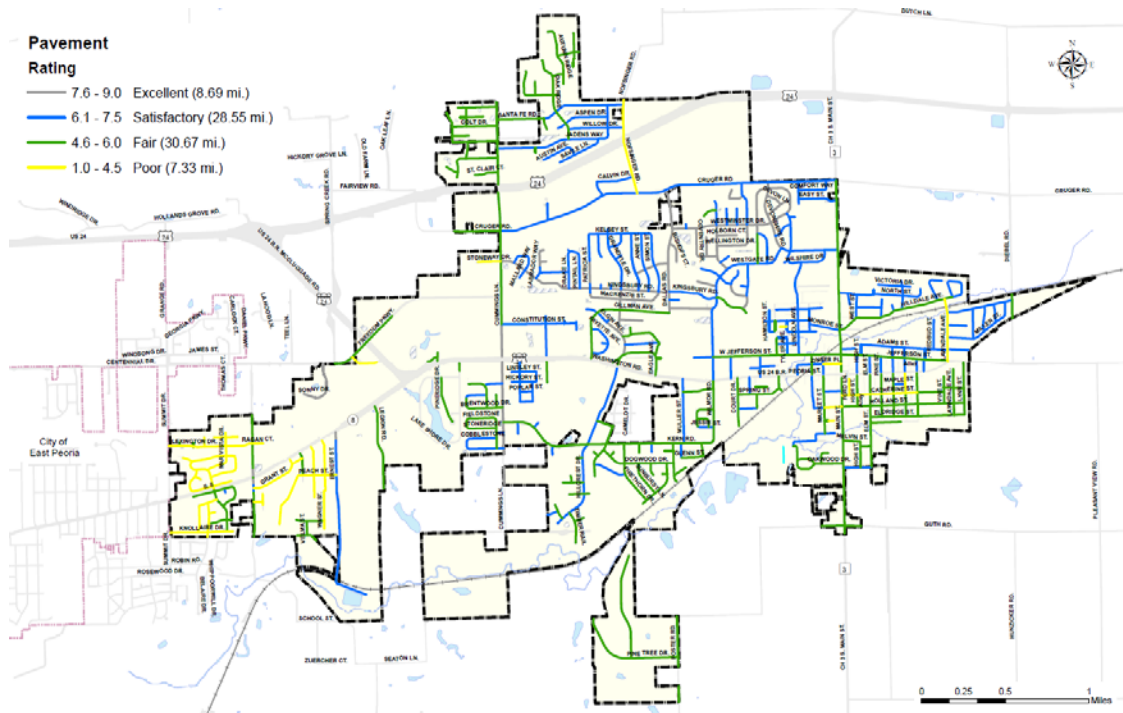


Sanitary – est. 78.6mi based on current inventory.
Water Mains – est. 84.7mi based on current inventory.
Roadways – primarily asphalt and overlay, est. 79.5 miles
Storm – concrete and clay pipe, est. 44 mi
Bridges – 10 bridges, Candlewood is at 22T and Stratford is at 12T.

In more detail from the current inventories:

Roadways

The following mapping is from the City's in-house inventory in 2016. Updates from the Roadbotics inventory in 2017 will be shared at the meeting, but are still in process of being incorporated into the City's GIS mapping.



Bridges

City of Washington															Source:		
Bridge Review															Date: 1/4/2017		
															Prepared By: EEA		
Structure Number	Federal Aid Route	Local Name	Sufficiency Rating		Year Constructed (or Recon.)	Years Old	Est. Lifespan	Est. Remain for Replc	Avg Daily Traffic		Inventoried			Est Replc \$/SF 300	Annual Replc (\$/Yr)	Last Rehab	
			2013	2017					(ADT)	Year	(ADT)	Year	Length (FT)				Width (FT)
090-6000	FAP 398	North Main St	96.7	96.7	1966	51	60	9	5900	2008	6250	2014	25	47	1175	\$ 352,500	\$ 5,875
090-6001		South Main St	95.7	95.7	1966	51	60	9	5900	2008	5950	2014	30	48	1453	\$ 435,786	\$ 7,263
090-6004		Stratford Dr	81.5	63.1	1968	49	80	31	450	2008	275	2014	22	44	975	\$ 292,380	\$ 3,655
090-6007		Elm St	99.0	99.0	1969	48	80	32	300	2008	250	2014	25	44	1100	\$ 330,000	\$ 4,125
090-6008		Candlewood Ln	40.5	29.5	1894	123	150	27	225	2008	200	2014	27	15	405	\$ 121,500	\$ 810
090-6010	FAU 6732	West Jefferson	94.1	94.1	1980	37	60	23	2100	2008	2250	2014	52	46	2376	\$ 712,920	\$ 11,882
090-6011		Westgate Rd	96.6	96.6	1982	35	60	25	2200	2008	2650	2014	37	40	1477	\$ 443,124	\$ 7,385
090-6012	FAU 6739	Dallas Rd	98.4	98.4	2000	17	60	43	2700	2008	2700	2008	40	34	1365	\$ 409,374	\$ 6,823
090-6013		Lawndale Rd	100.0	100.0	2002	15	80	65	550	2014	550	2014	64	35	2242	\$ 672,465	\$ 8,406
090-6088		Lincoln Ave	100.0	100.0	2009	8	60	52	1950	2014	1950	2014	23	47	1081	\$ 324,300	\$ 5,405
Average			90.3	87.3	1974	43		32	2228		2303		34	40	1365	\$ 4,094,349	\$ 61,629

Water Mains

As mention in the historical, all of the Cast Iron is assumed to be from the 1920s and of undersized 4" diameter. Upwards of 2/3 of all main breaks are on the Cast Iron portion of the system. A handout of main breaks will be distributed at the meeting.

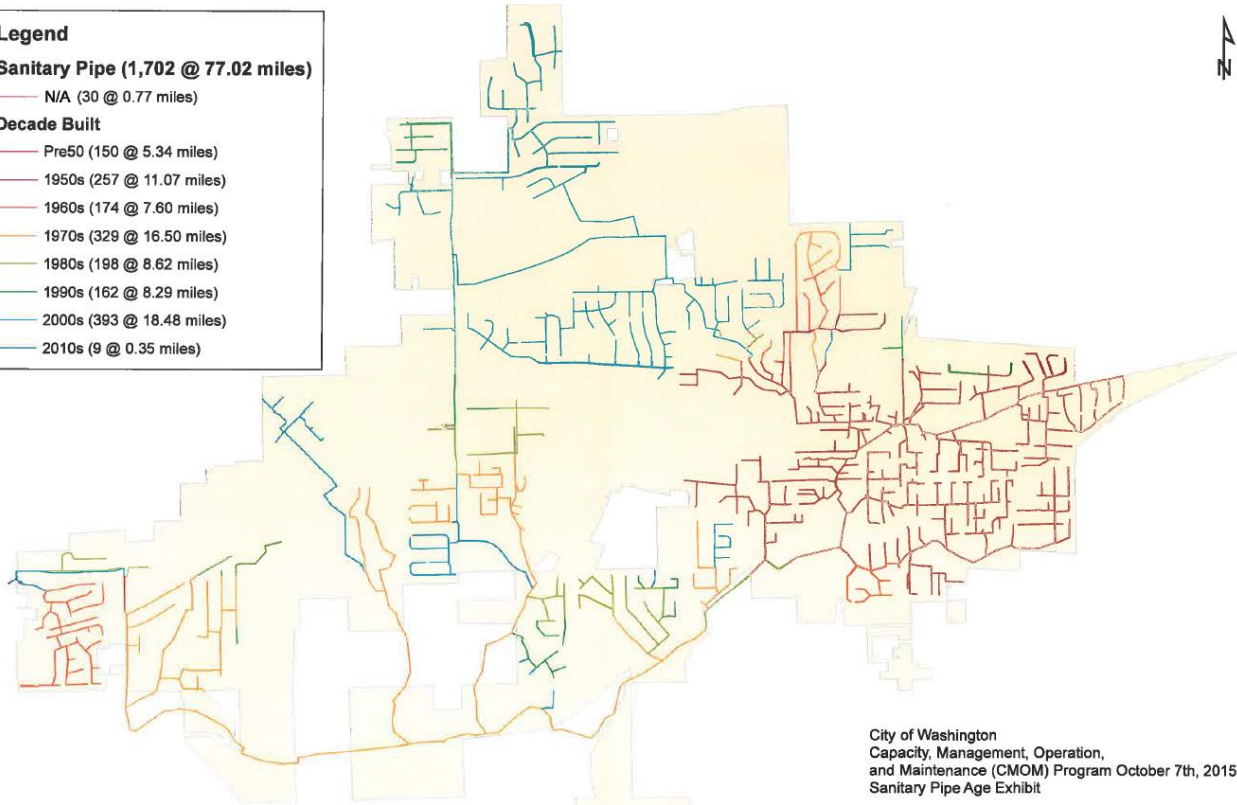
Cast Iron	Ductile Iron	PVC	PVC C-900	PE	Transite	Unknown	
125,778	19,463	184,894	37,327	28	14,548	65,491	447,528.1 Ft
23.8	3.7	35.0	7.1	0.0	2.8	12.4	84.8 Mi
28%	4%	41%	8%	0%	3%	15%	100%

Sanitary Sewer

The east end of town would have the most concentration of clay pipe, some pre-dating the formal sanitary collection system established as a CSO in the 1950s. This was later separated in the 1980s.

VCP	ESVCP	RCP	PVC	C900	DIP	Unknown
22%	1%	3%	30%	1%	4%	39%

Legend	
Sanitary Pipe (1,702 @ 77.02 miles)	
—	N/A (30 @ 0.77 miles)
Decade Built	
—	Pre50 (150 @ 5.34 miles)
—	1950s (257 @ 11.07 miles)
—	1960s (174 @ 7.60 miles)
—	1970s (329 @ 16.50 miles)
—	1980s (198 @ 8.62 miles)
—	1990s (162 @ 8.29 miles)
—	2000s (393 @ 18.48 miles)
—	2010s (9 @ 0.35 miles)



City of Washington
Capacity, Management, Operation,
and Maintenance (CMOM) Program October 7th, 2015
Sanitary Pipe Age Exhibit

cc: File