

Wanamaker Road Corridor Study

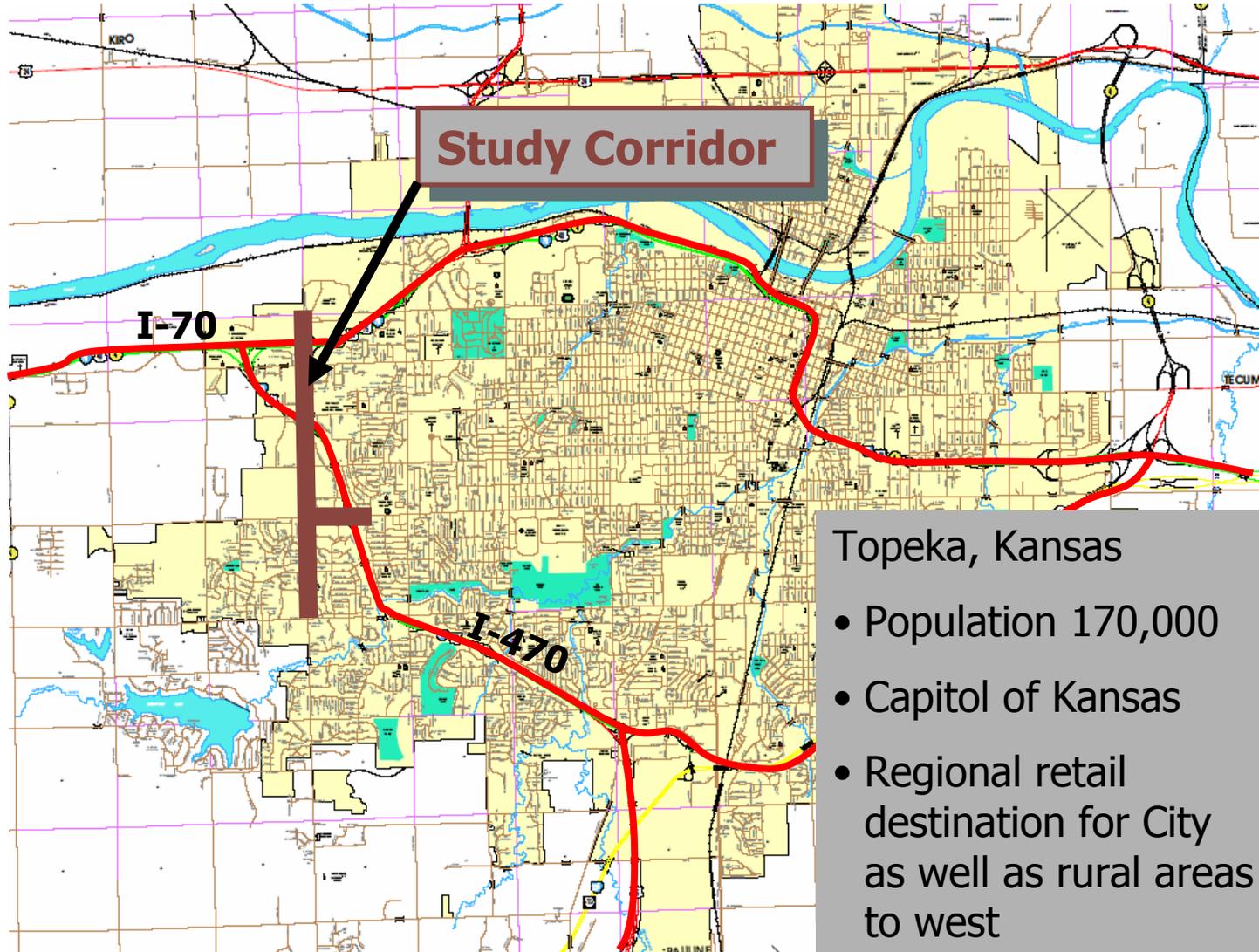
**6th National Access Management
Conference, Kansas City, Missouri
August 31, 2004**

Presented by

Michael R. Wahlstedt, PE, PTOE



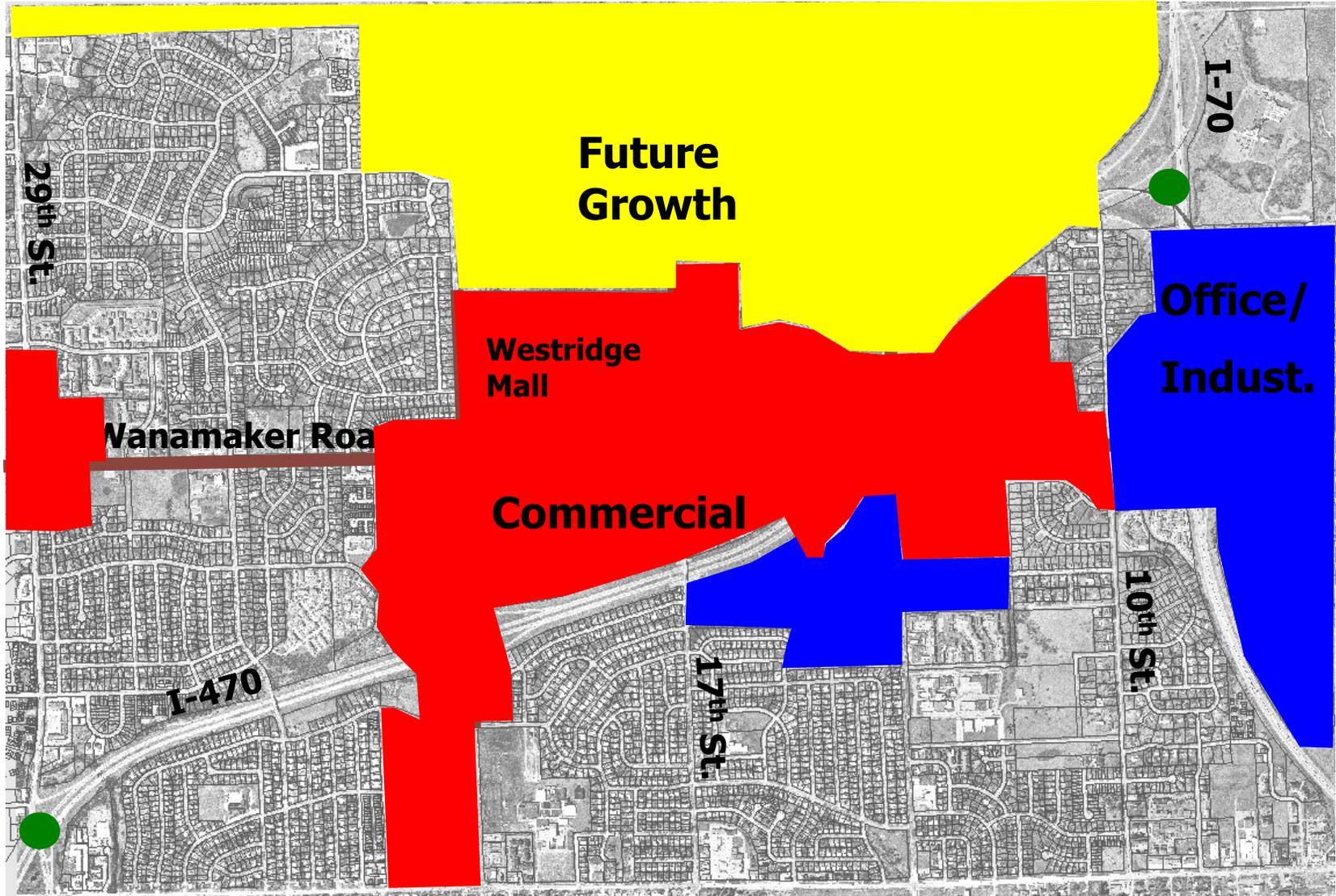
- City of Topeka
 - Topeka/Shawnee County MPO
 - KDOT
 - TranSystems Corporation
-
- Funding
 - MPO Planning Funds provided by the USDOT-FHWA, administered by MPO in cooperation with KDOT



Topeka, Kansas

- Population 170,000
- Capitol of Kansas
- Regional retail destination for City as well as rural areas to west

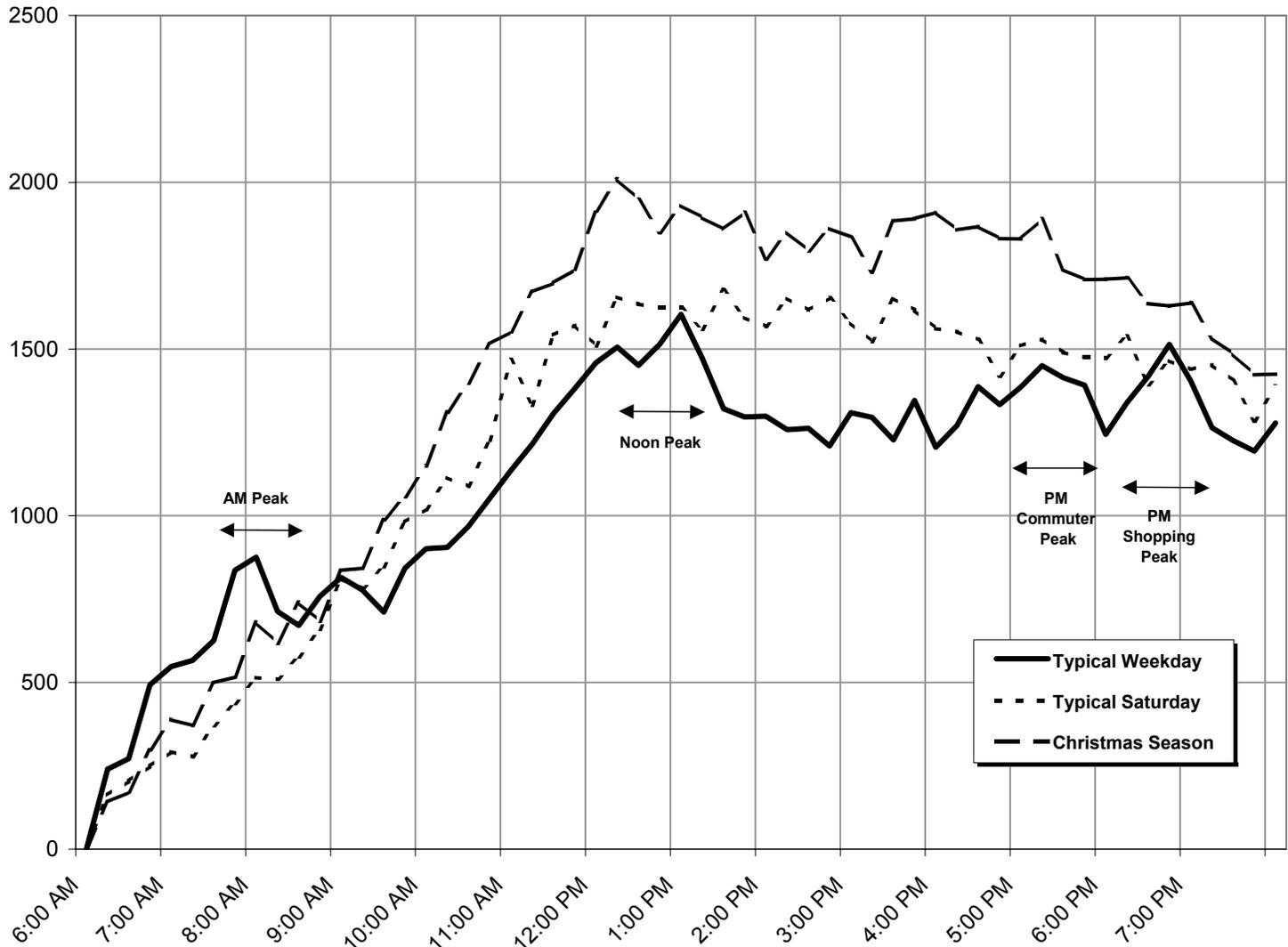
Wanamaker Road Corridor



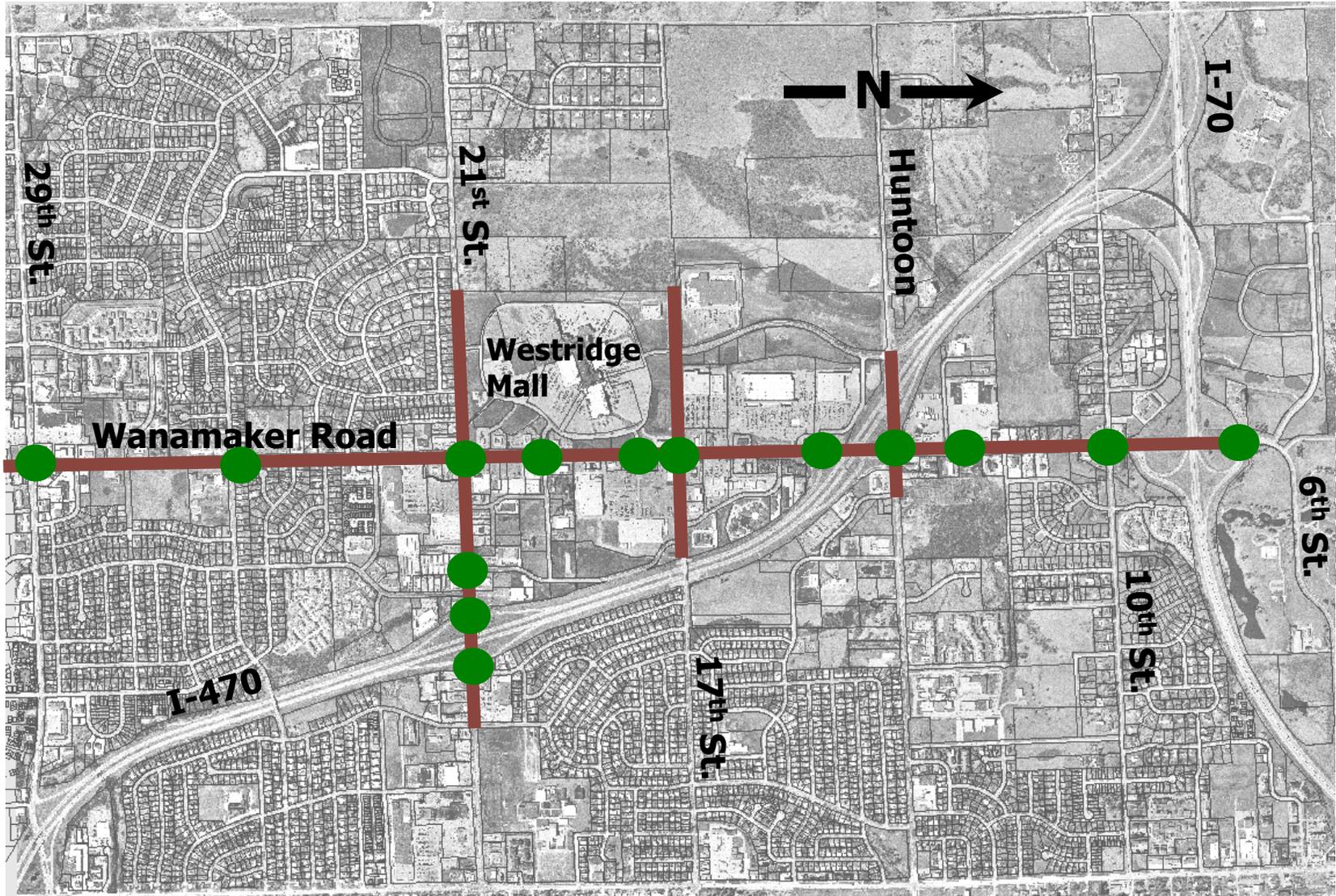
- Approximately 4 million square feet of retail development
- Existing daily traffic volumes 20,000 to 28,000
 - Saturday 22,000 to 32,000
- Christmas traffic approximately 25% higher than typical

Typical Daily Traffic Volumes		
Location	Weekday	Saturday
Wanamaker south of 10th Street	20,800	21,400
Wanamaker south of Huntoon Street	28,400	31,600
Wanamaker north of 17th Street	25,800	28,400
Wanamaker north of 19th Terrace	25,400	28,000
Wanamaker north of 25th Street	18,800	19,300
21st Street east of Wanamaker	25,100	27,400
21st Street west of Wanamaker	17,000	16,000
21st Street west of I-470	33,500	39,700
17th Street east of Wanamaker	10,100	11,400
17th Street west of Wanamaker	9,000	10,600

Daily Traffic Volumes



Existing Traffic Signals



Peak Hour Capacity Analysis Results Signalized Intersections, Existing Conditions										
Intersection	A.M.		Noon		P.M.		Saturday		Christmas	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
29th & Wanamaker	42.5	D	46.9	D	48.8	D	48.3	D	56.9	E
25th & Wanamaker	36.2	D	35.6	D	37.5	D	37.6	D	40.7	D
21st & Wanamaker	39.3	D	47.6	D	48.9	D	49.6	D	76.7	E
19th Ter & Wanamaker	30.2	C	31.4	C	25.9	C	32.2	C	37.6	D
Westridge & Wanamaker	24.8	C	38.0	D	33.7	C	38.0	D	46.9	D
17th & Wanamaker	28.2	C	42.1	D	44.5	D	42.6	D	49.1	D
Winding & Wanamaker	32.4	C	30.3	C	32.3	C	29.3	C	33.1	C
Huntoon & Wanamaker	36.5	D	40.5	D	41.0	D	42.7	D	48.4	D
Home Depot & Wanamaker	23.3	C	33.0	C	26.6	C	33.3	C	35.9	D
10th & Wanamaker	31.2	C	32.2	C	33.3	C	33.8	C	34.9	C
I-70 WB & Wanamaker	20.3	C	21.0	C	23.1	C	21.9	C	23.8	C
21st & 470 SB	22.6	C	19.8	B	27.5	C	21.0	C	25.5	C
21st & 470 NB	26.1	C	25.4	C	26.6	C	26.5	C	33.7	C

Delay – Average Vehicle Delay (seconds/vehicle)
LOS – Level of Service

Peak Hour Capacity Analysis Results Signalized Intersections, Future Traffic/Existing Geometrics						
Intersection	Noon		P.M.		Saturday	
	Delay	LOS	Delay	LOS	Delay	LOS
29th & Wanamaker	52.2	D	53.9	D	55.8	E
25th & Wanamaker	34.8	C	37.2	D	37.2	D
21st & Wanamaker	76.6	E	80.9	F	85.7	F
19th Ter & Wanamaker	39.4	D	26.4	C	36.2	D
Westridge & Wanamaker	36.1	D	39.2	D	41.5	D
17th & Wanamaker	63.6	E	70.7	E	82.6	F
Winding & Wanamaker	30.6	C	34.0	C	29.7	C
Huntoon & Wanamaker	77.1	E	66.7	E	80.3	F
Home Depot & Wanamaker	32.1	C	25.7	C	32.9	C
10th & Wanamaker	38.4	D	42.1	D	38.7	D
I-70 WB & Wanamaker	25.6	C	40.8	D	27.1	C
21st & 470 SB	23.0	C	40.8	D	27.1	C
21st & 470 NB	29.3	C	37.5	D	36.9	D

Delay – Average Vehicle Delay (seconds/vehicle)
LOS – Level of Service

Peak Hour Capacity Analysis Results Unsignalized Intersections, Existing Conditions					
Intersection	A.M.	Noon	P.M.	Saturday	Christmas
22nd & Wanamaker	B	D	D	D	F
Chuck E Cheese & Wanamaker	B	D	E	E	F
Toy R Us & Wanamaker	C	F	F	F	F
Conoco & Wanamaker	B	C	D	D	E
PetCo & Wanamaker	B	D	E	E	F
Hobby Lobby & Wanamaker	B	F	F	F	F
Best Buy (S) & Wanamaker	B	D	D	F	F
Best Buy (N) & Wanamaker	C	F	F	F	F
I-470 NB & Wanamaker	C	F	F	F	F
Truck Stop (S) & Wanamaker	B	B	C	B	C
Quality Inn & Wanamaker	C	D	E	D	E
Motel 6 & Wanamaker	C	F	F	F	F
NB Clothing & Wanamaker	B	D	F	D	F
Food 4 Less & Wanamaker	B	C	F	C	D
11th Street & Wanamaker	B	C	D	C	D
I-70 NB & Wanamaker	n/a	n/a	n/a	F	F
Hardees & 21st Street	n/a	n/a	C	F	F
Ashworth & 21st Street	n/a	n/a	F	F	F
Westport (N) & 21st Street	n/a	n/a	F	F	F
Westport (S) & 21st Street	n/a	n/a	F	F	F

Queue Storage Deficiencies

Peak Queue Storage Requirements Existing Conditions												
Intersection	Southbound			Westbound			Northbound			Eastbound		
	Rt.	Thru	Left	Rt.	Thru	Left	Rt.	Thru	Left	Rt.	Thru	Left
29th & Wanamaker	--	350	325	--	475	325	--	425	175	--	375	225
25th & Wanamaker	--	425	75	--	200	125	--	450	75	--	150	200
21st & Wanamaker	--	425	350	275	350	400	--	575	225	--	350	225
19th Ter & Wanamaker	150	525	150	--	175	100	--	500	250	--	275	175
Westridge & Wanamaker	150	550	125	--	175	200	75	625	150	--	125	175
17th & Wanamaker	150	500	225	200	275	325	--	625	225	200	225	175
Winding & Wanamaker	75	500	350	--	--	--	--	525	250	--	200	275
Huntoon & Wanamaker	--	650	125	--	200	375	175	500	250	200	225	125
Home Depot & Wanamaker	50	450	75	--	100	225	--	475	75	--	125	75
10th & Wanamaker	150	425	100	--	175	250	125	375	175	--	200	200
I-70 WB & Wanamaker	--	225	--	--	25	400	--	150	--	--	--	--
21st & 470 SB	400	--	250	--	550	200	--	--	--	125	500	--
21st & 470 NB	--	--	--	100	600	--	275	--	375	--	325	375

Queue storage requirements in feet, per lane for highest peak hour condition.
Distances in bold are locations where the estimated maximum queue length exceeds the existing turn bay length.

- “High Accident Locations”
 - Six of Top 10 High Accident Intersections
 - Six of Top 10 High Accident Midblock Sections
- Key Safety Issues
 - Closely spaced signals – queuing between intersections
 - Inadequate turn storage – queuing into through traffic lanes
 - Clearance Intervals

- Three public meetings held
 - Existing Conditions
 - Initial Recommendations
 - Final Recommendations
- One-on-one meetings with key property owners
 - Key element in keeping property owners informed and getting buy-in on improvements

Recommended Improvements

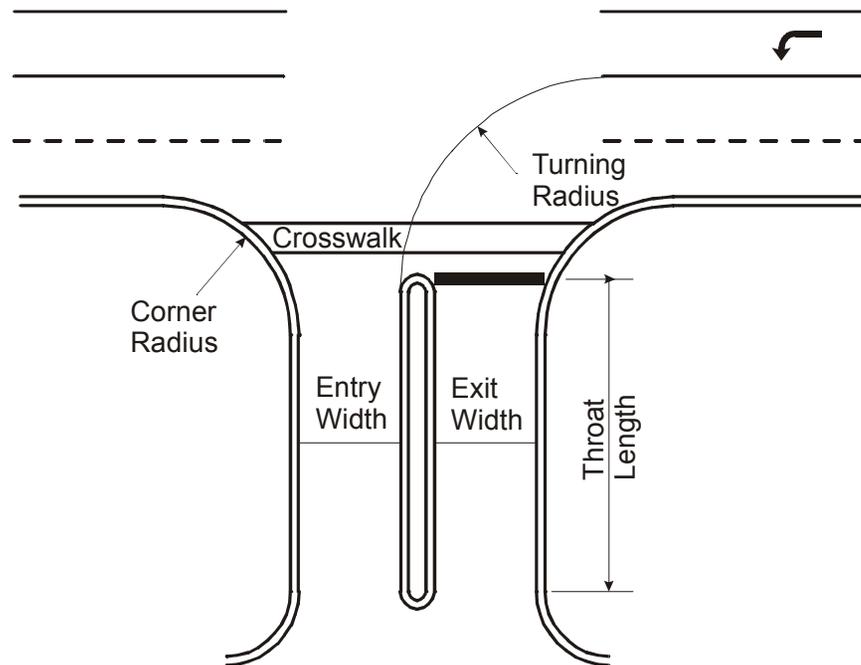
- Implement Access Management Policies
 - Medians – on all sections with future projected traffic > 24,000 and in vicinity of all signals
 - Median Openings – Full openings only at suitable future signal locations; Left Turn In where queue storage/influence areas permit
 - Signal Spacing – $\frac{1}{4}$ mile desirable minimum, $\frac{1}{8}$ mile permitted in some locations

Recommended Improvements

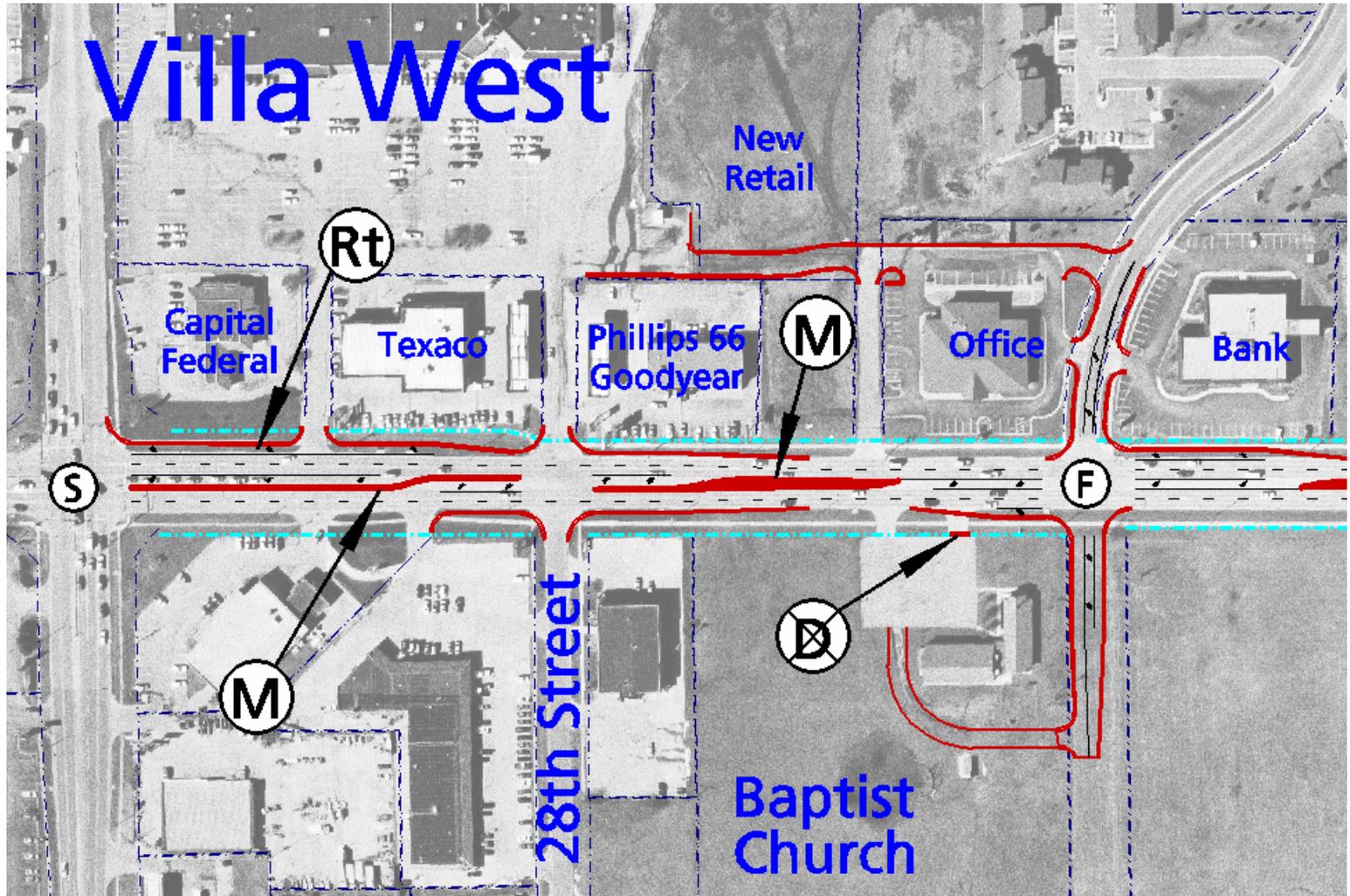
- Implement Access Management Policies
 - Left-Turn Lanes – Required at all median openings, signalized intersections; on arterials at all drives/cross streets where left-turns permitted; storage requirements provided
 - Right-Turn Lanes – On arterials where right-turn volume exceeds 25 vph, at all locations where right turn volume exceeds 100 vph, no “continuous” right turn lanes

Recommended Improvements

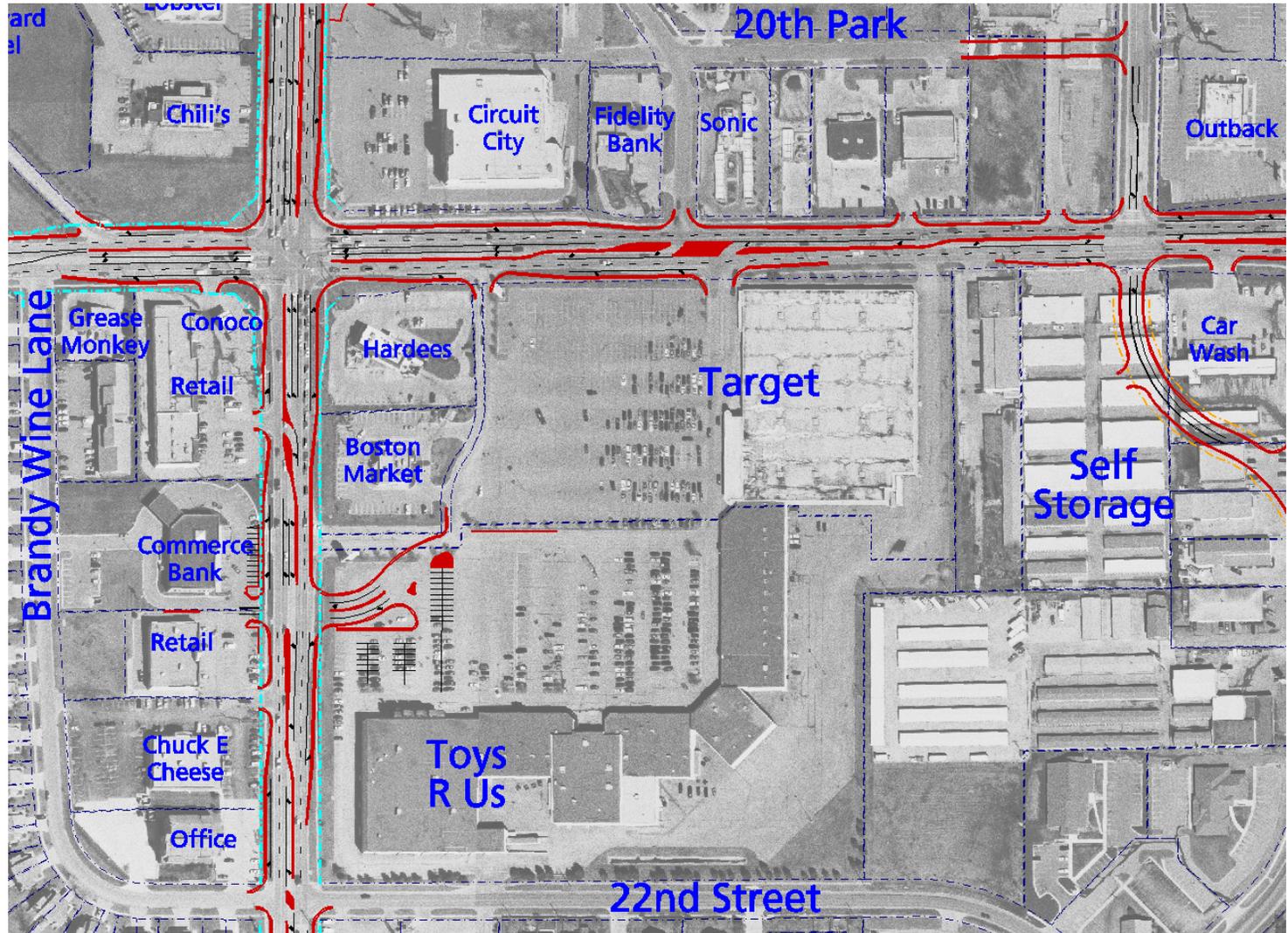
- Implement Access Management Policies
 - Corner Radii minimums
 - Driveway Throat design standards



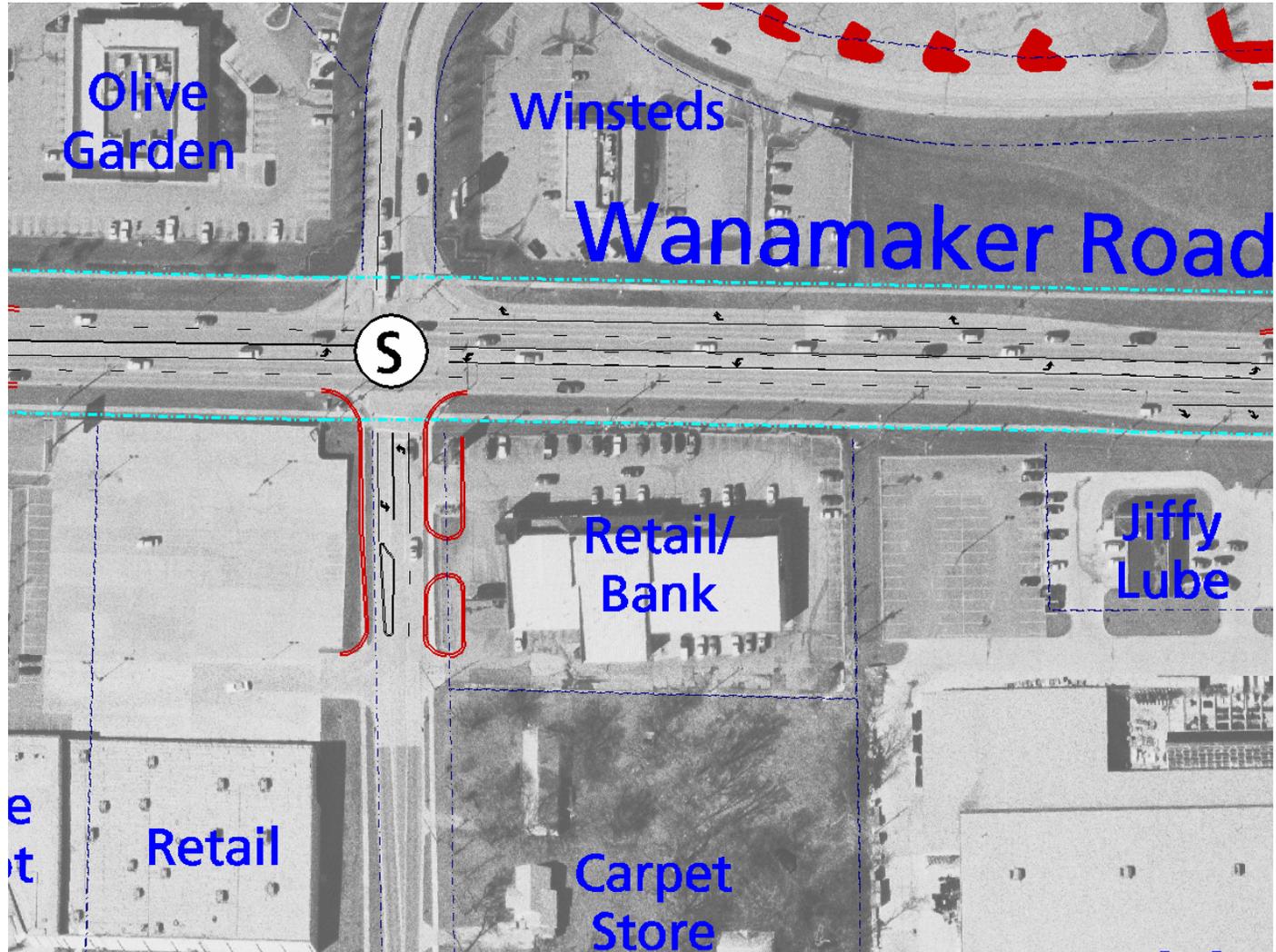
Corridor Improvement Recommendations



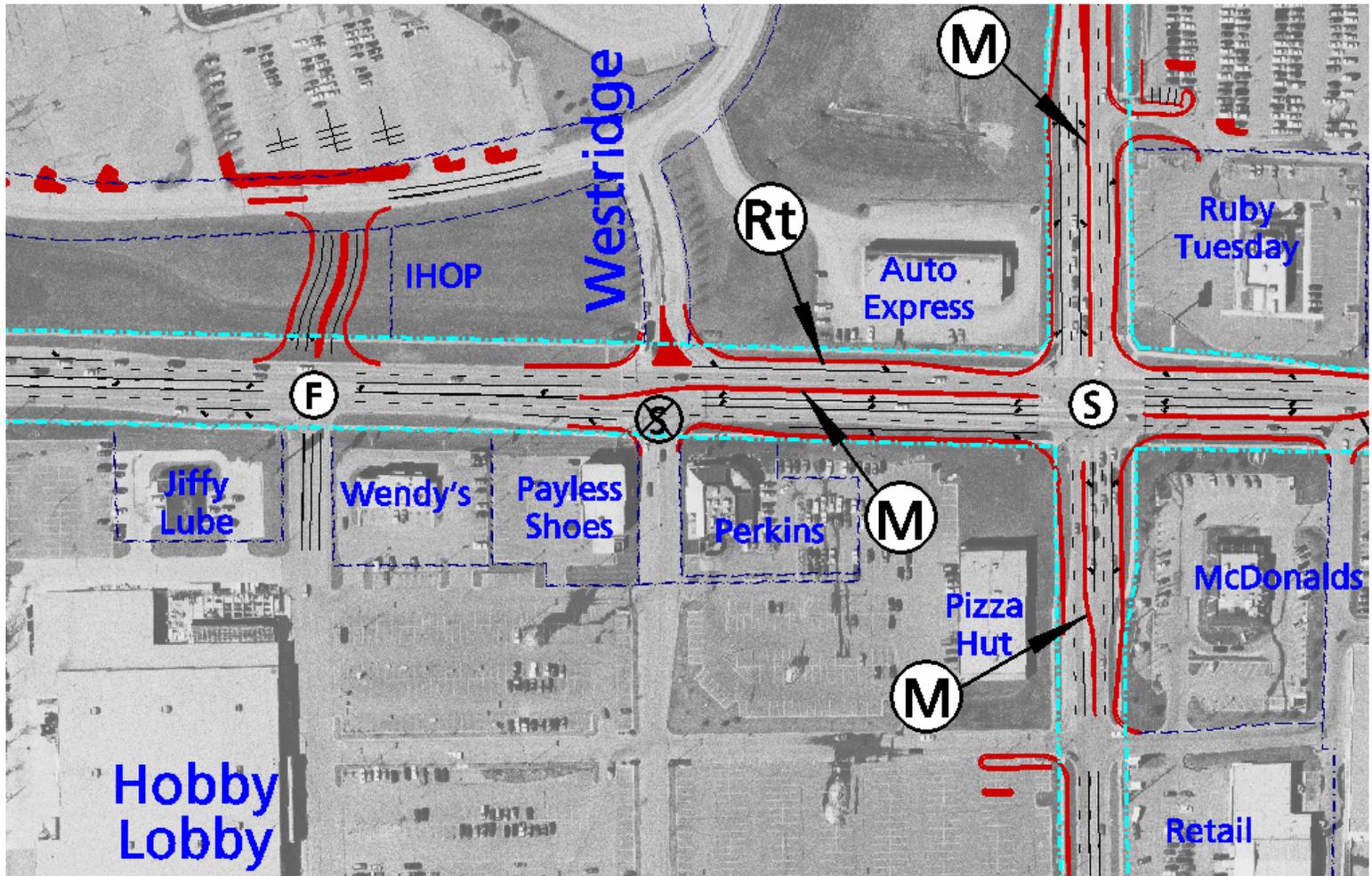
Corridor Improvement Recommendations



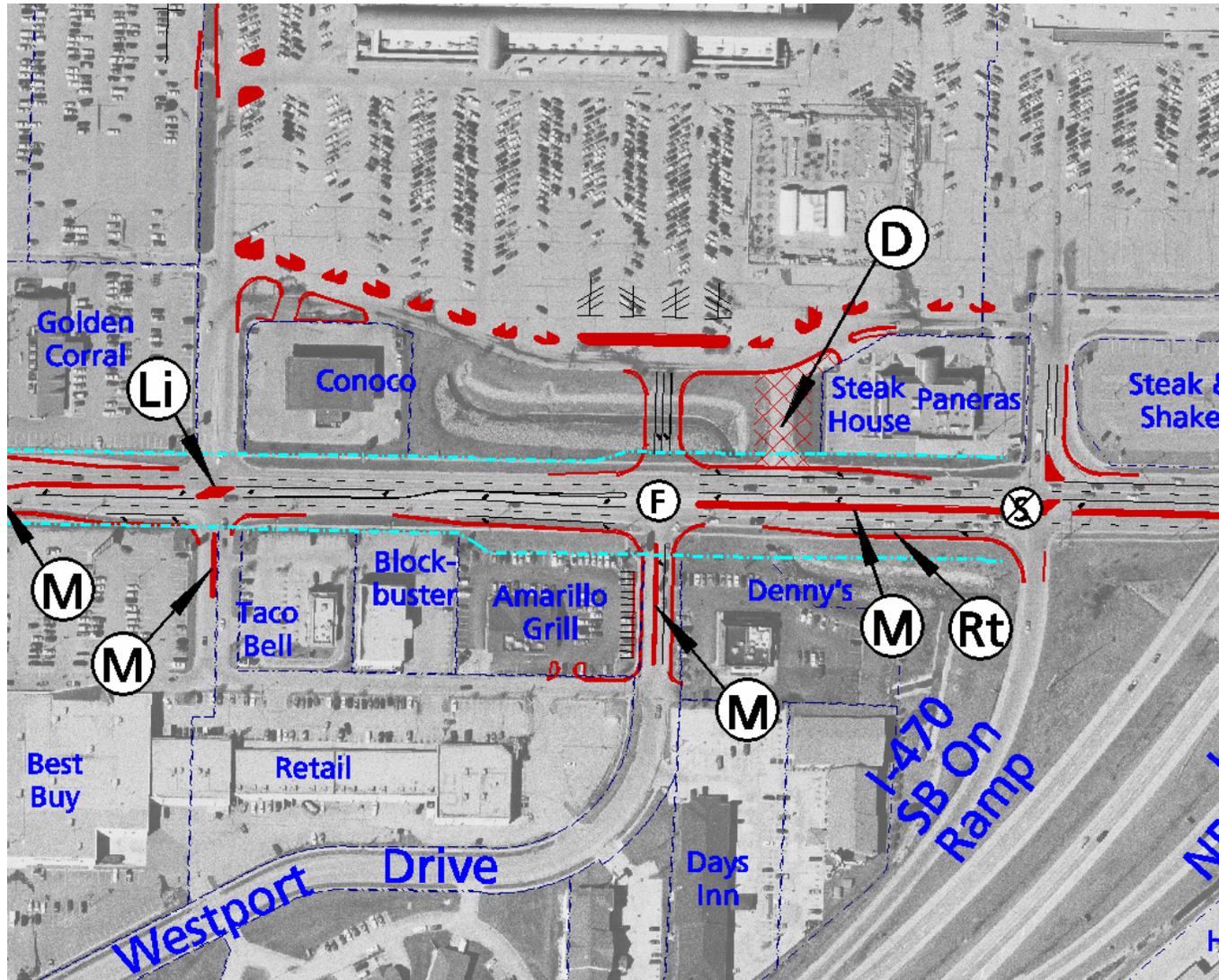
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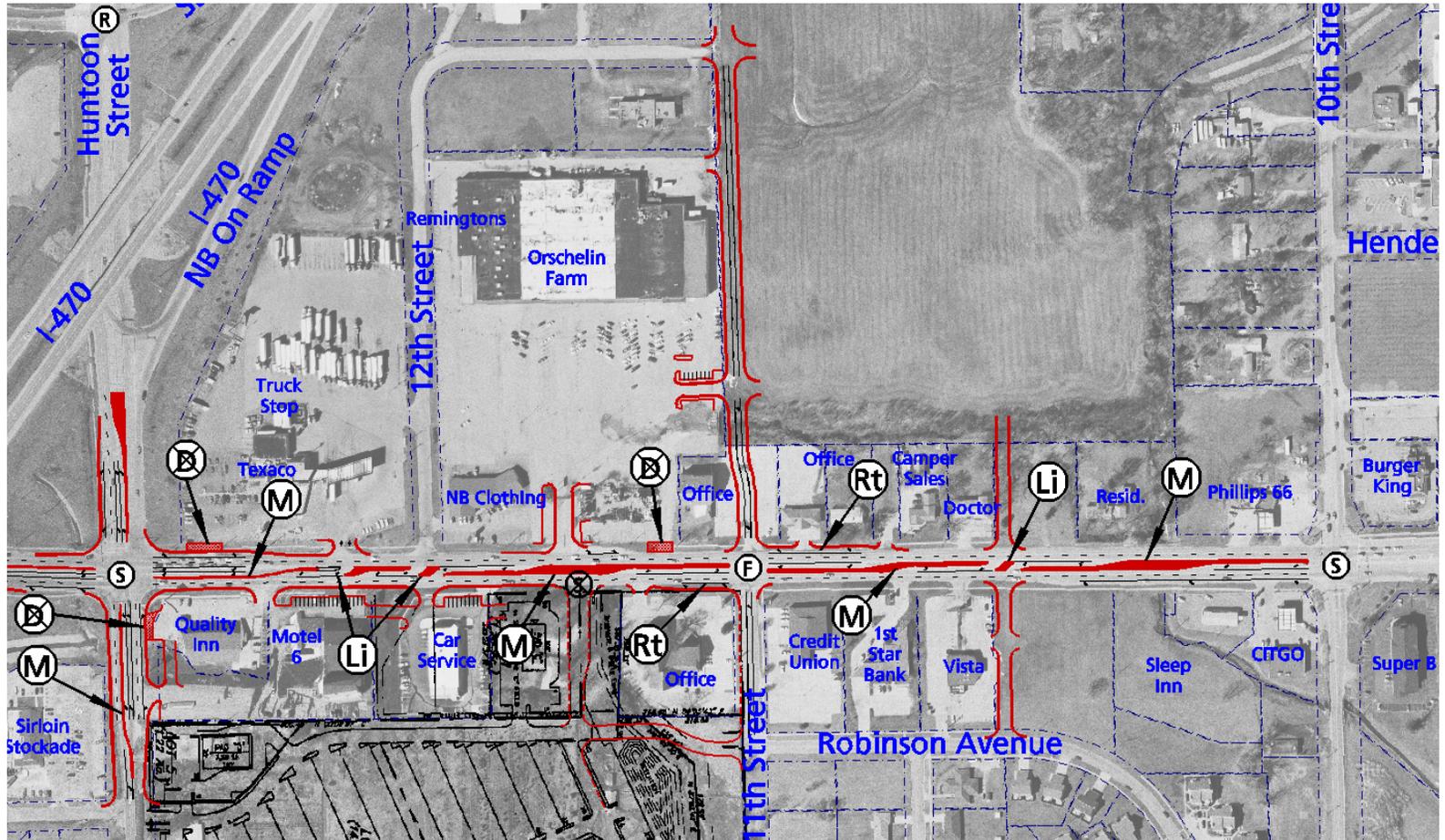
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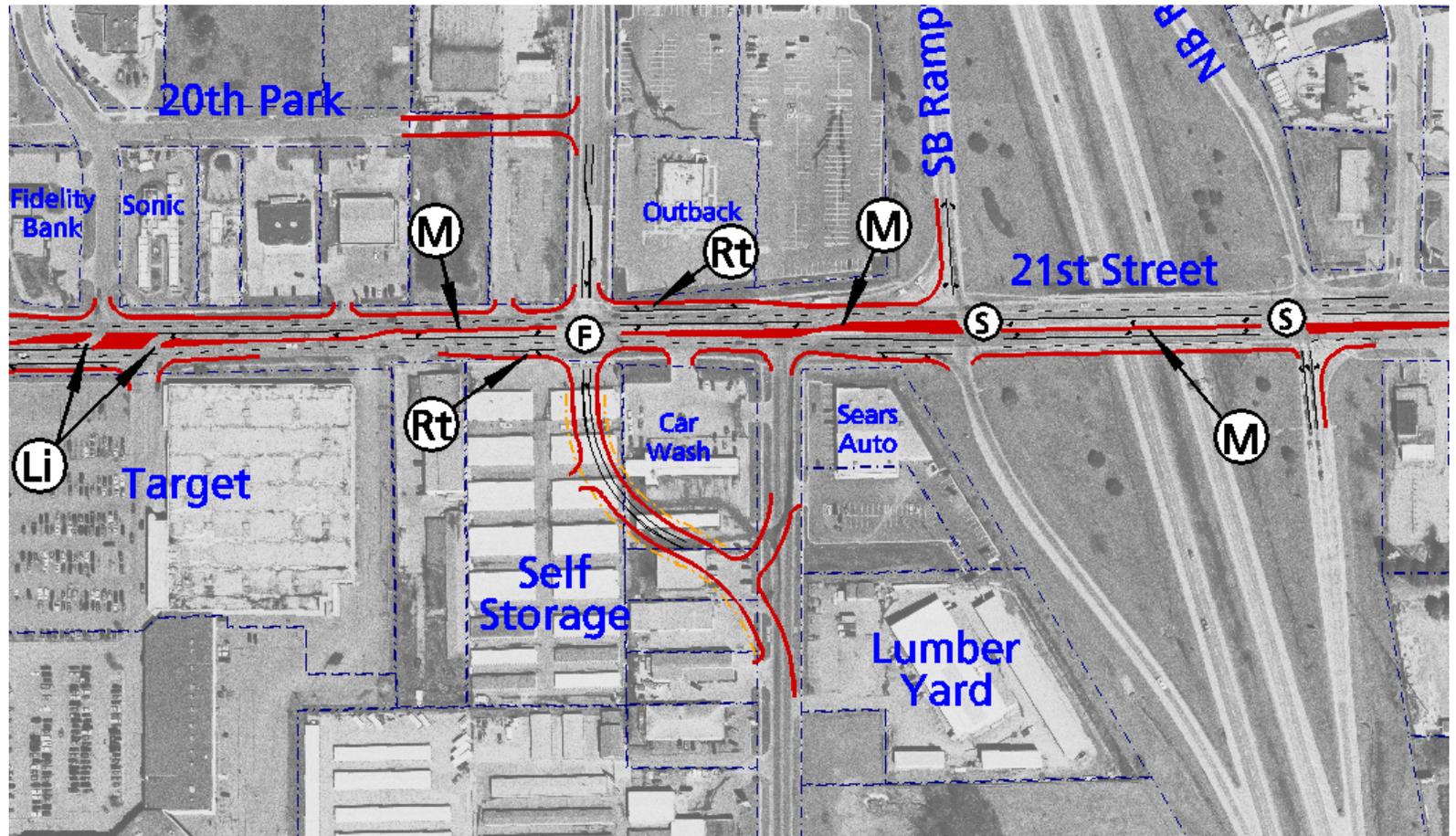
Corridor Improvement Recommendations



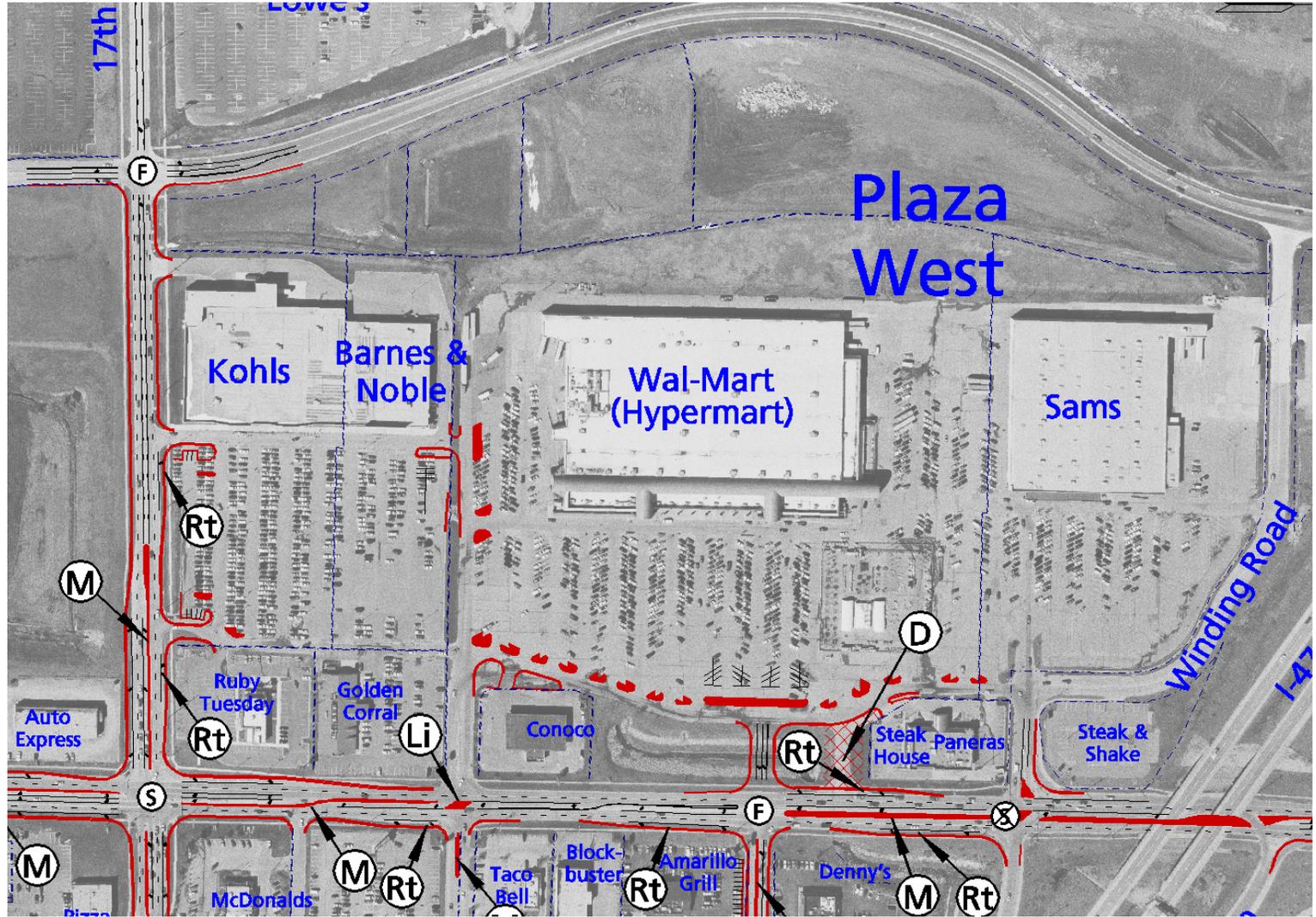
Corridor Improvement Recommendations



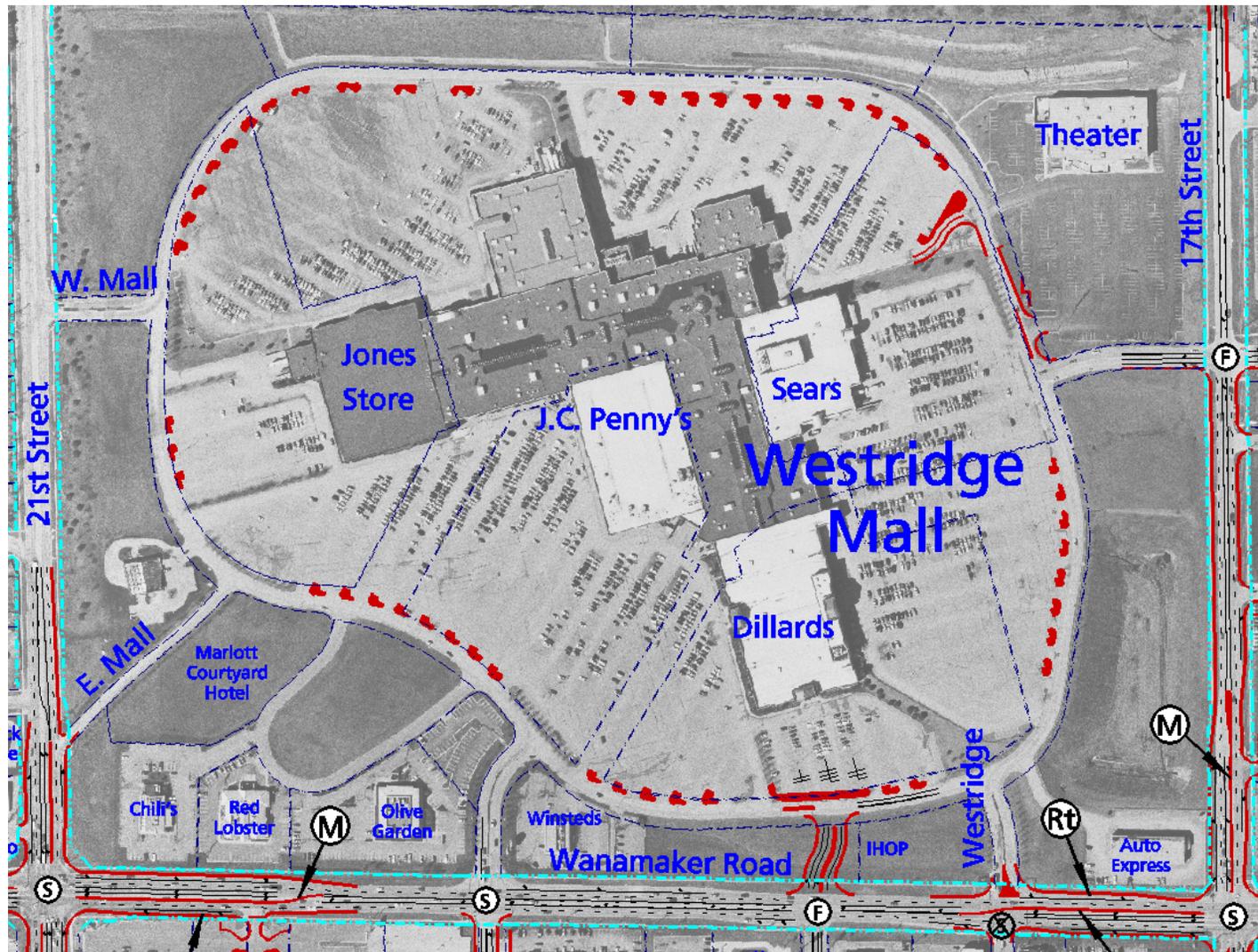
Corridor Improvement Recommendations



Site Improvement Recommendations



Site Improvement Recommendations



Bicycle/Pedestrian Improvements

- Key recommendations
 - Complete missing sidewalk gaps
 - Institute policies on “street to store” accessible connections
- Additional recommendations
 - Improve landscaping along sidewalks
 - Improve environment around I-470 interchange, add lighting
 - Add separate bike/ped connections across I-470 to improve accessibility to residential areas to east

- Reviewed existing routes and ridership within study area
 - Recommended new transfer center within corridor
 - Recommended implementation of circulator bus route along corridor
- Reviewed bus stop locations and amenities
 - Recommended bus stop improvements at key locations – sidewalks connections to curb, shelters, etc.
 - Also encouraged pedestrian connections from street to stores

Opinion of Probable Construction Costs Wanamaker Corridor Recommended Improvements		
Project	Description	Construction Cost Estimate
Project A (South)	Wanamaker Road and 28th Street	\$ 316,800.00
Project A (North)	Wanamaker Road and 27th Street	\$ 519,600.00
Project B	Wanamaker Road, North of 27th Street to 23rd Street	\$ 717,600.00
Project C (South)	Wanamaker Road and Westridge Plaza Entrance	\$ 208,800.00
Project C (North)	Wanamaker Road and 21st Street	\$ 1,497,600.00
Project D (South)	Wanamaker Road, 19th Terrace to Topeka Crossing South Drive	\$ 499,200.00
Project D (North)	Wanamaker Road at 17th Street	\$ 885,600.00
Project E (East)	17th Street east of Wanamaker Road	\$ 202,800.00
Project E (West)	17th Street west of Wanamaker Road	\$ 818,400.00
Project F	Wanamaker Road, Westport Drive to I-470	\$ 1,130,400.00
Project G	Wanamaker Road and Huntoon Street	\$ 794,400.00
Project H	Wanamaker Road, 11th Street to 12th Street	\$ 604,800.00
Project I	Wanamaker Road, north of 11th Street to 10th Street	\$ 220,800.00
Project J	21st Street and Westport Road	\$ 619,200.00
Project K	21st Street and I-470	\$ 1,530,000.00
	TOTAL	\$10,566,000.00
Costs are in 2001 dollars and do not include design costs, right of way or utility relocations.		

Wanamaker Corridor Improvement Project Prioritization		
Priority	Project	Description
1-3 Years	Project D	Wanamaker Road, 19th Terrace to 17th Street
	Project J	21st Street and Westport Road
3-5 Years	Project C	Wanamaker Road and Westridge Plaza Entrance, 21st Street
	Project F	Wanamaker Road, Westport Drive to I-470
5-10 Years	Project A	Wanamaker Road, 27th Street and 28th Street
	Project E	17th Street East and West of Wanamaker Road
	Project G	Wanamaker Road and Huntoon Street
	Project H	Wanamaker Road, 11th Street to 12th Street
	Project K	21st Street and I-470
10-20 Years	Project B	Wanamaker Road, North of 27th Street to 23rd Street
	Project I	Wanamaker Road, north of 11th Street to 10th Street

- Wanamaker Corridor has developed with a framework for good access management, e.g. collector streets and opportunities for cross-access, however several improvements are needed to complete the system:
 - Address intersection capacity needs
 - Fix key signal spacing problems
 - Pursue additional cross-access opportunities
 - Establish access framework for remaining undeveloped/redevelopment areas