



City Council Workshop Agenda

October 24, 2023 at 5:00 PM

City Hall Council Chambers - 210 W. 6th Ave and Virtual

PLEASE NOTE TIME CHANGE ABOVE

The City of Kennewick broadcasts Council meetings via Zoom and on the City's website at
<https://www.go2kennewick.com/CouncilMeetingBroadcasts>.
No public comment is taken at workshops.

1. CALL TO ORDER
2. LONG RANGE PLANNING INTRODUCTION
3. FIRE DEPARTMENT STANDARD OF COVERAGE
4. IT STRATEGIC PLAN 2024 - 2028
5. PARK & RECREATION COMPREHENSIVE PLAN STRATEGIC RECOMMENDATIONS
6. ADJOURN

Council Agenda Coversheet	Agenda Item Number: 2. Council Date: 10/24/2023	Category: Info Only
	Agenda Item Type: Presentation Subject: Long Range Planning Introduction Department: City Manager	
<u>Summary</u> Tonight we will be discussing three long-range plans that are designed to provide a path forward for the organization and community in the upcoming biennium and well into the future. Many of the items in the plans will require prioritization and a phased approach. Some of the items may not be able to be implemented. Some priorities may require a new, dedicated revenue source in order to implement them. In preparation for the discussion, we will take a few minutes to review the importance of long-range planning and why the timing is critical as we begin preparing next year for the 2025/2026 biennium and into the future. In addition to the needs identified in each of these strategic plans, there are critical needs in each of the departments that also should be prioritized as we prepare for the upcoming biennial budget and strategic planning process.		
Attachments: 1. Graphic		



Council Agenda Coversheet 	Agenda Item Number: 3. Council Date: 10/24/2023 Agenda Item Type: Presentation Subject: Fire Department Standard of Coverage Department: Fire Department	Category: Info Only
Summary In 2008, the City of Kennewick City Council adopted fire and emergency medical response objectives as required by Revised Code of Washington (RCW) 35.103. These remain the performance objectives we are currently measured by today. However, our community has changed substantially over the past 15 years. RCW 35.103 requires city fire departments to set standards for addressing the reporting and accountability of substantially career fire departments, and to specify performance measures applicable to response time objectives for certain major services. The major services components that must be measured by the Kennewick Fire Department include: • Fire Suppression • Emergency Medical Services (EMS) • Special Operations (e.g., Technical Rescue and Hazardous Materials)RCW 35.103 further stipulates that every city and town shall establish time objectives for the following measurements: • Turnout time • Response times • Fire Suppression Incidents: 1st Arriving Engine Company • Fire Suppression Incidents: Deployment of Full First Alarm Assignment • EMS Incidents: 1st Arriving Basic Life Support (BLS) Unit • EMS Incidents: 1st Arriving Advanced Life Support (ALS) Unit Performance objectives must be established at no less than ninety percent of the achievement for each response time objective. At the start of 2023, the cities of Richland, Kennewick and Pasco collaboratively hired Fitch & Associates to conduct a Standard of Cover for the purpose of completing a comprehensive evaluation of the current fire department and emergency service delivery system. The three cities also tasked Fitch & Associates with completing a comprehensive evaluation of the current emergency medical services delivery system. The purpose of this presentation is to: • Educate Council on the performance and response history of Kennewick's fire and emergency medical services (EMS) system, • Present performance and response history information on the fire and EMS system of all three Tri-Cities municipalities, • Propose updated performance standards for adoption, • Discuss KFD's immediate needs with Council and provide our recommendations for addressing these needs, • Share KFD's mid and long-term needs with Council.		
Attachments: 1. Presentation 2. Draft Report 3. KRP -Combined Draft Report		

KENNEWICK FIRE DEPARTMENT

Guided by principle, strong ethics & driven to serve others with compassion. We are trained, disciplined & effective.



KFD Standard of Coverage



Tonight's Focus

The main focus for this evening is to:

- Educate Council on the performance and response history of Kennewick's fire and emergency medical services (EMS) system
- Present performance and response history information on the fire and EMS systems of all three Tri-City municipalities
- Propose updated performance standards for adoption
- Discuss KFD's immediate needs with Council and provide our recommendations for addressing with these needs
- Share KFD's mid and long-term needs with Council



Thank You

- **Appreciate Your Support**

Council's key priorities place a heavy focus on the importance of public safety

- **Growth is Fantastic**

As growth continues, there is an increased need for KFD response and service

- **Value Efficiency and Effectiveness**

We are actively pursuing solutions that help maintain service levels and limit unnecessary unit responses

- **Alignment with Regional Partners**

The fire and emergency medical services system in our region relies heavily on regional collaboration and alignment

- **Sustainable Solutions**

We work hard to be good stewards of every dollar we receive



Review of Project Purpose

KFD developed a Standard of Cover because:

- Kennewick is growing rapidly; we need to address current and future needs
- Tangible trigger points must be established for determining necessary system enhancements
- The fire and EMS system must be efficient and effective, as well as affordable and sustainable
- The system must be performance-based and agile; focused on outcomes, rather than speed for all incidents
- Alignment with our key regional partners is paramount





What This is NOT

The Standard of Cover is an extremely important project for our City and for the region.

However there are several things it is NOT:

- A tool to chase national standards, such as NFPA 1710
- An arbitrary comparison against other comparable-sized cities and/or agencies
- A mechanism to obtain additional staff and resources without clarity on achievable outcomes





Our Needs

Our needs go beyond what we are going to discuss this evening.

We recognize:

- The need to be strategic
- The system we create must be sustainable
- Our focus is a three-pronged approach:
 1. Reduce/eliminate incidents
 2. Send the right number of units at the right time for each call nature
 3. Add additional resources





Kennewick ONLY – Incidents by Call Type

- KFD's demand for service is projected to continue to rise
- Compounded annual growth rate (CAGR) over the past 5 years = **9.1%**
- In 2021 and 2022, growth demand increased by **16.3%** and **15.7%**

Program	Number of Calls				
	2018	2019	2020	2021	2022
EMS	7,115	7,459	7,333	8,582	9,400
Fire	308	262	276	355	346
Rescue	21	22	24	26	36
Hazardous Condition	92	117	108	107	113
Service	873	906	1,203	1,200	1,654
Good Intent	1,007	1,013	961	1,285	1,852
False Alarm and False Call	449	504	493	507	560
Other	21	29	20	19	21
Total	9,886	10,312	10,418	12,081	13,982
Calls per Day	27.1	28.3	28.5	33.1	38.3
Total Calls YoY Growth		4.3%	0.8%	16.3%	15.7%
EMS Calls Percentage	72%	72%	70%	71%	67%
EMS Calls per Day	19.5	20.4	20.0	23.5	25.8
EMS Calls YoY Growth		4.8%	-2.0%	17.4%	9.5%



Tri-Cities Area – Incidents by Call Type

- Demand for service continues to increase throughout the Tri-Cities area
- Regionally, the CAGR over the past 4 years = **11.3%**
- In 2022, Tri-Cities fire departments answered an average of **88.2** calls per day
- Highest demand calls = EMS

Program	Number of Calls			
	2019	2020	2021	2022
EMS	16,910	16,960	19,742	21,883
Fire	688	738	864	847
Rescue	68	60	69	90
Hazardous Condition	272	243	300	325
Service	1,740	2,299	2,748	3,628
Good Intent	2,315	2,386	2,996	3,938
False Alarm and False Call	1,303	1,244	1,321	1,456
Other	57	38	45	41
Total	23,353	23,968	28,085	32,208
Calls per Day	64.0	65.5	76.9	88.2
Total Calls YoY Growth		2.4%	17.5%	14.7%
EMS Calls Percentage	72%	71%	70%	68%
EMS Calls per Day	46.3	46.3	54.1	60.0
EMS Calls YoY Growth		0.0%	16.7%	10.8%



Kennewick ONLY - Unit Responses by Call Type

- Unit response numbers better reflect workload
- In 2022, average **1.6** units per incident
- CAGR for unit responses **over the past 5 years = 10.4%**
- In 2021 and 2022, unit responses increased by **18.8%** and **10.3%**

Program	Number of KFD Unit Responses				
	2018	2019	2020	2021	2022
EMS	10,622	11,722	12,054	14,207	15,469
Fire	801	822	808	1,098	1,031
Rescue	37	41	65	67	98
Hazardous Condition	189	258	220	226	215
Service	1,049	1,124	1,539	1,620	2,258
Good Intent	1,498	1,541	1,511	2,017	2,759
False Alarm and False Call	1,015	1,155	1,106	1,266	784
Other	27	50	29	37	39
Total	15,238	16,713	17,332	20,538	22,653
Unit Responses per Day	41.7	45.8	47.4	56.3	62.1
KFD Responses YoY Growth		9.7%	3.4%	18.8%	10.3%



Tri-Cities Area - Unit Responses by Call Type

- In 2022, all three municipalities averaged **1.6** units per incident
- CAGR for unit responses **over the past 4 years = 10.8%** across all three cities
- Total unit responses for the Tri-Cities area in **2022 = 52,837**

Agency	Number of Unit Responses			
	2019	2020	2021	2022
Kennewick	16,713	17,332	20,538	22,653
Richland	8,728	8,841	10,595	12,016
Pasco	13,388	14,234	16,652	18,168
Total	38,829	40,407	47,785	52,837
Calls per Day	106.4	110.4	130.9	144.8
Total Calls YoY Growth		3.8%	18.6%	10.6%



Kennewick ONLY - 2022 Incidents by Category

- EMS incidents continue to comprise the majority of KFD's call volume
- Good Intent incidents are second in demand by very a wide margin
- Service calls rank third

Call Category	Number of Calls	Calls per Day	Call Percentage
EMS	9,400	25.8	67.2%
Fire	346	0.9	2.5%
Rescue	36	0.1	0.3%
Hazardous Condition	113	0.3	0.8%
Service	1,654	4.5	11.8%
Good Intent	1,852	5.1	13.2%
False Alarm and False Call	560	1.5	4.0%
Other	21	0.1	0.2%
Total	13,982	38.3	100.0%



Tri-Cities Area - 2022 Incidents by Category

- EMS incidents continue to be the highest demand for all municipalities
- Like Kennewick, Good Intent calls are a distant second for all departments
- Service calls remain the third highest demand for all cities

Call Category	Number of Calls	Calls per Day	Call Percentage
EMS	21,883	60.0	67.9%
Fire	847	2.3	2.6%
Rescue	90	0.2	0.3%
Hazardous Condition	325	0.9	1.0%
Service	3,628	9.9	11.3%
Good Intent	3,938	10.8	12.2%
False Alarm and False Call	1,456	4.0	4.5%
Other	41	0.1	0.1%
Total	32,208	88.2	100.0%



Tri-Cities Area – Incident Responses by Agency

- KFD continues to respond to the highest number of incidents in the region; 2022 = **43%** of all incidents
- Richland has the second highest call volume; 2022 = **31%** of all incidents
- Pasco follows closely; 2022 = **26%** of all incidents

Agency	Number of Calls			
	2019	2020	2021	2022
Kennewick	10,312	10,418	12,081	13,982
Richland	7,201	7,368	8,675	9,929
Pasco	5,840	6,182	7,329	8,297
Total	23,353	23,968	28,085	32,208
Calls per Day	64.0	65.5	76.9	88.2
Total Calls YoY Growth		2.4%	17.5%	14.7%



Kennewick ONLY - 2022 Calls vs. Busy Time

Kennewick ONLY

Program	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response	Percentage of Total Busy Hours
EMS	9,400	15,469	1.6	8,350	32.4	76.0%
Fire	346	1,031	3.0	1,278	74.4	11.6%
Rescue	36	98	2.7	47	28.5	0.4%
Hazardous Condition	113	215	1.9	95	26.6	0.9%
Service	1,654	2,258	1.4	557	14.8	5.1%
Good Intent	1,852	2,759	1.5	381	8.3	3.5%
False Alarm and False Call	560	784	1.4	248	19.0	2.3%
Other	21	39	1.9	25	38.0	0.2%
Total	13,982	22,653	1.6	10,981	29.1	100.0%



Tri-Cities Area – 2022 Calls vs. Busy Time

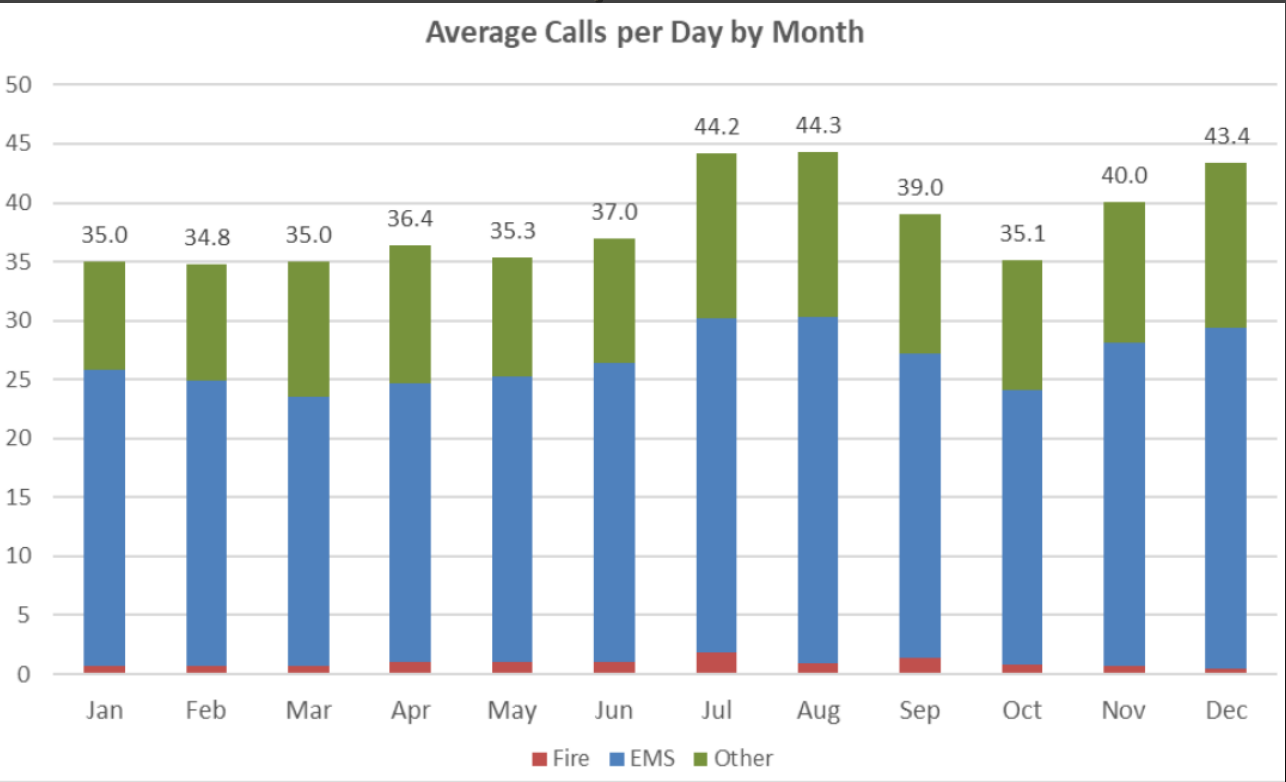
All Tri-Cities Agencies (Combined)

Program	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response	Percentage of Total Busy Hours
EMS	21,883	35,873	1.6	18,247	30.5	74.5%
Fire	847	2,576	3.0	2,851	66.4	11.6%
Rescue	90	253	2.8	177	42.0	0.7%
Hazardous Condition	325	716	2.2	318	26.6	1.3%
Service	3,628	4,790	1.3	1,346	16.9	5.5%
Good Intent	3,938	6,182	1.6	836	8.1	3.4%
False Alarm and False Call	1,456	2,368	1.6	673	17.1	2.7%
Other	41	79	1.9	37	28.3	0.2%
Total	32,208	52,837	1.6	24,486	27.8	100.0%

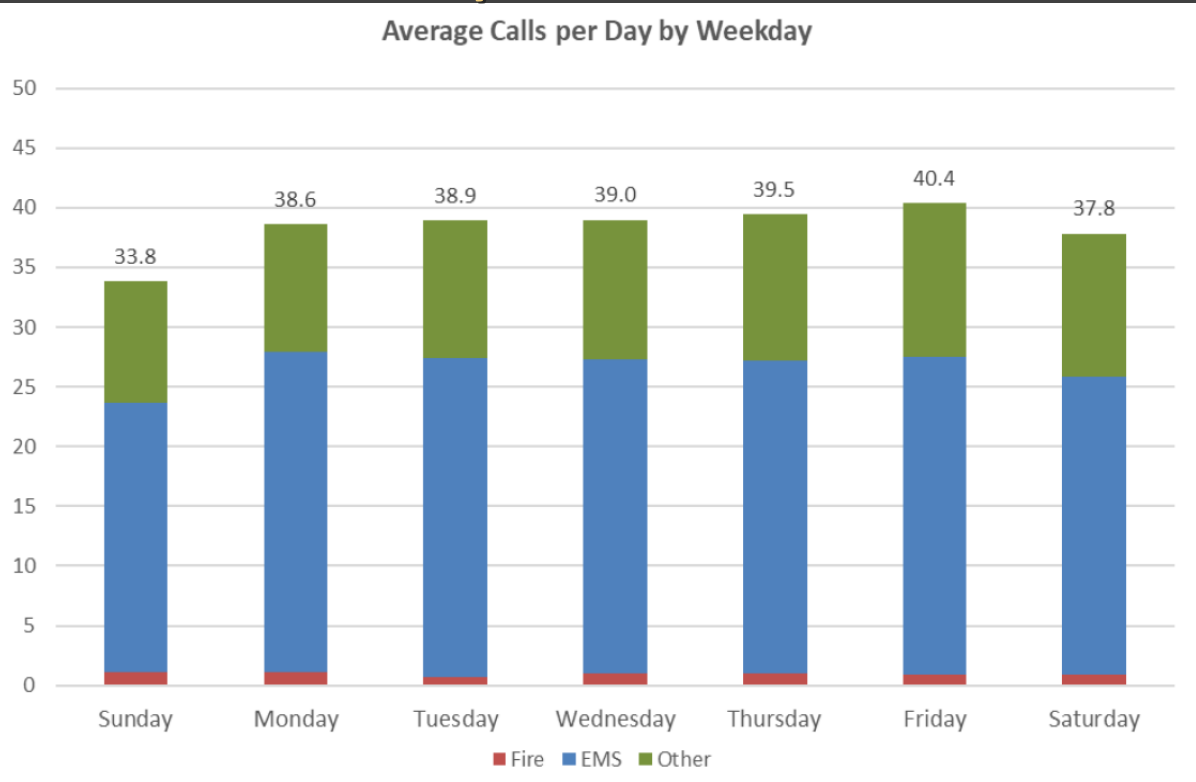


Kennewick ONLY – 2022 Daily Call Averages

Kennewick ONLY – Monthly View



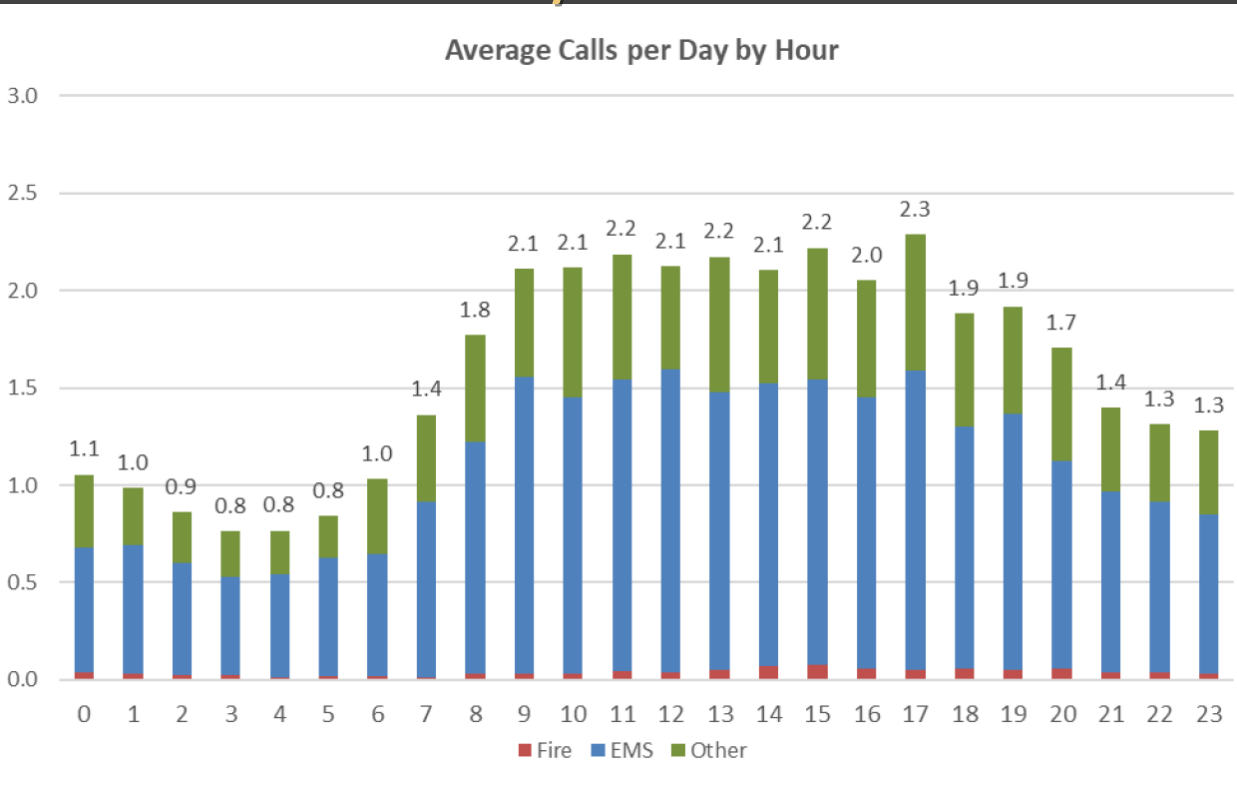
Kennewick ONLY - Day of Week View



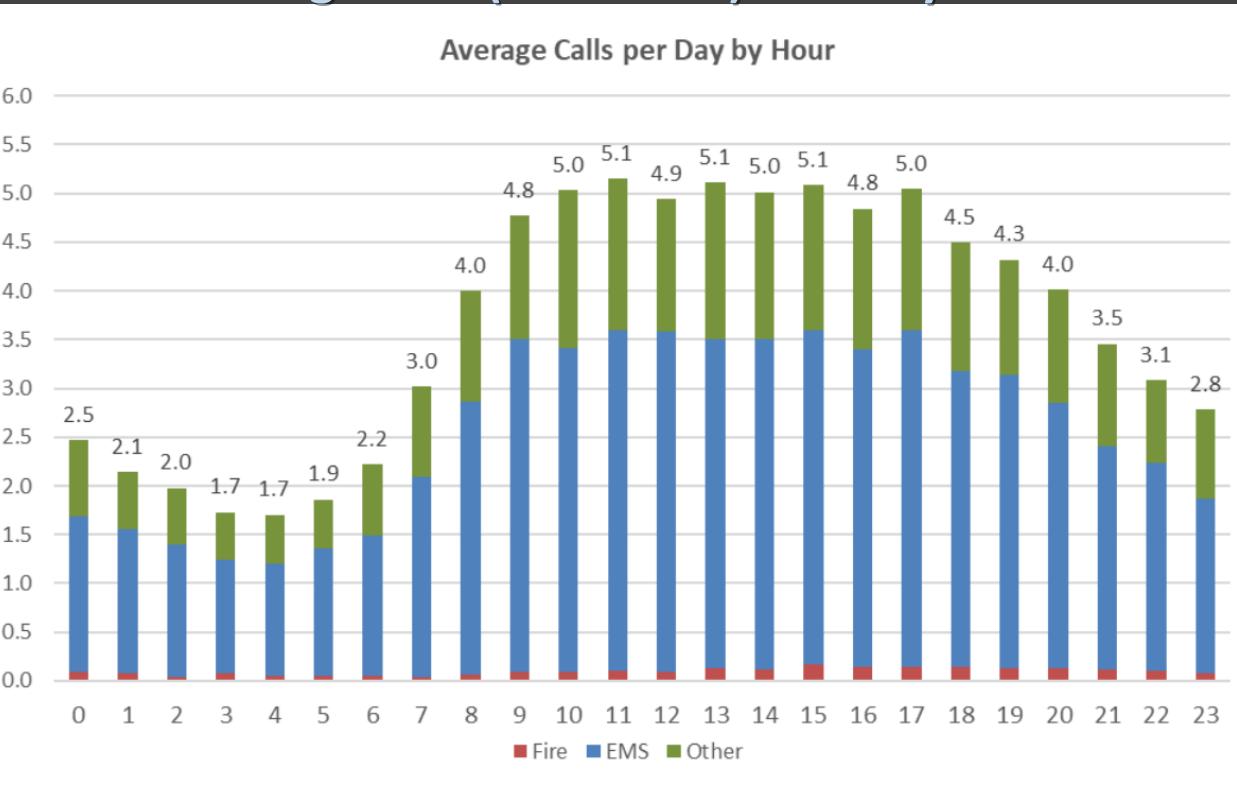


Comparison – 2022 Hourly Call Averages

Kennewick ONLY – Hourly View



All Tri-Cities Agencies (Combined) – Hourly View





Kennewick ONLY – 2022 Workload by Unit

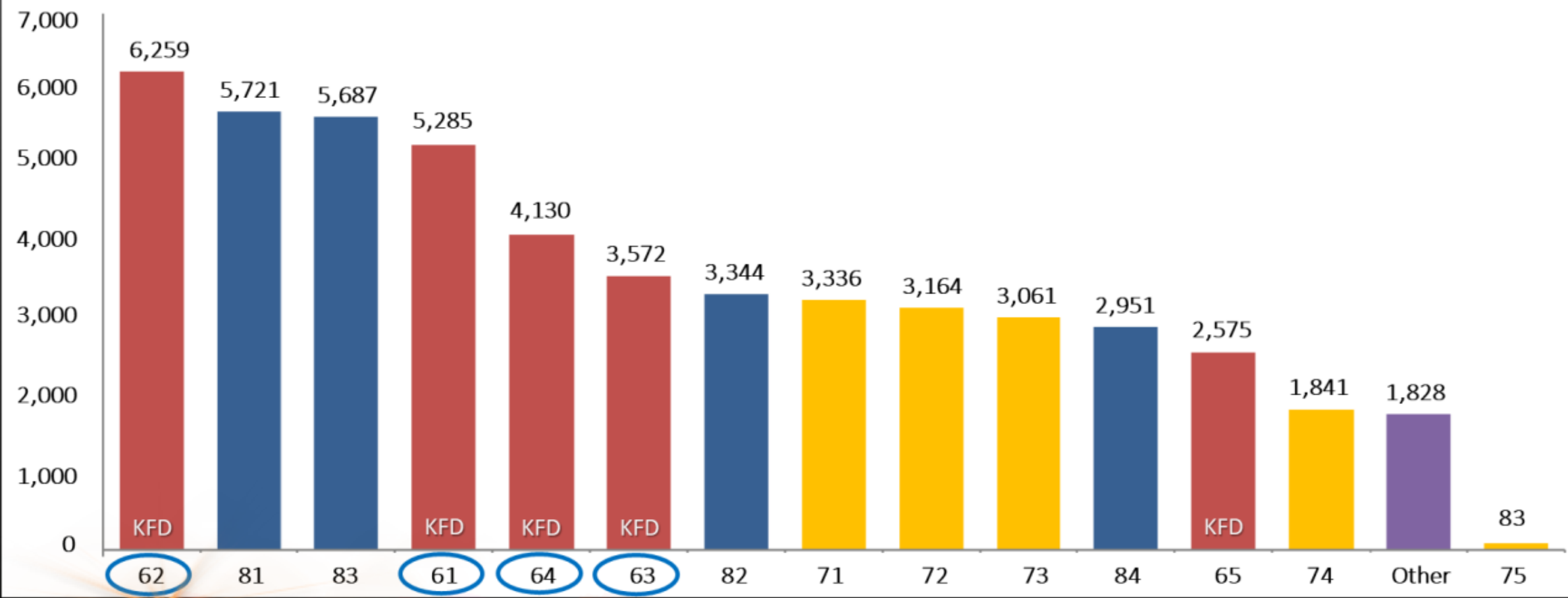
- In 2022, KFD's ambulance units averaged **37.5** responses per day
- The ladder truck/engines averaged **19.1** responses per day
- KFD's busiest medic units were **M1822**, **M1821** & **M1824**
- E1811** was the busiest fire suppression unit

Unit ID	Unit Description	Station	Number of Responses	Avg. Busy Minutes per Response	Busy Hours	Responses per Day	Busy Hours per Day
M1822	Ambulance	62	3,446	28	1,626	9.4	4.5
M1821	Ambulance	61	2,748	37	1,695	7.5	4.6
M1824	Ambulance	64	2,578	32	1,387	7.1	3.8
M1825	Ambulance	65	2,562	29	1,251	7.0	3.4
E1811	Engine	61	2,512	23	964	6.9	2.6
M1823	Ambulance	63	2,362	35	1,386	6.5	3.8
E1812	Engine	62	2,275	22	844	6.2	2.3
BC181	Battalion Chief	BC	1,779	21	623	4.9	1.7
E1813	Engine	63	912	27	412	2.5	1.1
L1815	Ladder Truck	65	643	24	260	1.8	0.7
E1814	Engine	64	564	26	248	1.5	0.7
E1835	Engine	65	74	50	62	0.2	0.2
All Other	NA	NA	198	67	221	0.5	0.6



Tri-Cities Area – 2022 Workload by Station Area

Number of Unit Responses by Response Area





Tri-Cities Area – 2022 Breakdown of Responses

- Workload distribution shows the need for multiple units responding from Stations 62 and 61
- Stations 64 and 63 also reveal a continued rise in demand

Response Area	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm & False Call	Other	Total	Responses per Day
Station 62	4,158	280	17	47	712	835	189	21	6,259	17.1
Station 81	3,687	357	52	106	268	765	486	0	5,721	15.7
Station 83	4,102	212	10	63	483	483	329	5	5,687	15.6
Station 61	3,718	229	9	71	507	628	122	1	5,285	14.5
Station 64	2,860	214	26	29	483	353	157	8	4,130	11.3
Station 63	2,494	133	36	43	294	357	212	3	3,572	9.8
Station 82	2,413	119	8	124	177	296	190	17	3,344	9.2
Station 71	2,253	149	30	60	325	377	138	4	3,336	9.1
Station 72	2,164	85	5	40	399	354	113	4	3,164	8.7
Station 73	2,074	151	4	51	328	310	135	8	3,061	8.4
Station 84	1,997	223	22	14	302	300	91	2	2,951	8.1
Station 65	1,835	80	9	22	237	292	99	1	2,575	7.1
Station 74	1,173	109	3	32	215	256	53	0	1,841	5.0
Station 75	37	2	3	3	3	12	21	2	83	0.2
Other	908	233	19	11	57	564	33	3	1,828	5.0



Kennewick ONLY – EMS Transport Rates

- Approx. **60%** of EMS calls result in patient transport
- Non-transport EMS calls take about **24.5 min.**
- EMS calls with patient transport last 2.2 times longer = approx. **54 min.**

Medical Level	Transport		Non-Transport		
	Duration	Number of Calls	Duration	Number of Calls	Transport Rate
Med 1	0:53:02	359	0:25:49	184	66.1%
Med 2	0:53:46	3,478	0:25:55	1,433	70.8%
Med 3	0:52:10	1,464	0:26:24	400	78.5%
Med 4	1:05:31	124	0:52:10	124	50.0%
MVA	0:54:01	155	0:24:50	93	62.5%
MVAE	1:09:15	16	0:41:43	5	76.2%
Other	1:04:48	27	0:20:17	1,538	1.7%
EMS Total	0:53:40	5,623	0:24:31	3,777	59.8%



Tri-Cities Area – EMS Transports by Station Area

- Approx. **60%** of EMS calls in the Tri-Cities area result in patient transport
- Approx. number of EMS transports per day in the Tri-Cities = **36.2**
- Total EMS transports for Tri-Cities area in 2022 = **13,201**

First Due Station	Transport		Non-Transport		Transport Rate
	Duration (minute)	Number of Calls	Duration (minute)	Number of Calls	
Station 62	51.2	1,309	21.9	1,088	54.6%
Station 64	48.4	1,308	25.3	526	71.3%
Station 83	48.7	1,209	18.9	671	64.3%
Station 61	59.4	1,175	25.0	914	56.2%
Station 71	39.7	1,151	20.6	620	65.0%
Station 73	40.9	1,146	19.6	637	64.3%
Station 72	51.8	1,043	22.4	869	54.6%
Station 81	42.6	1,010	18.7	665	60.3%
Station 63	56.8	974	25.5	640	60.3%
Station 82	47.5	691	20.7	425	61.9%
Station 65	51.4	674	26.0	450	60.0%
Station 74	45.8	599	22.6	344	63.5%
Station 84	47.6	569	18.3	354	61.6%
Station 75	42.9	22	21.3	14	61.1%
Other	55.5	321	38.0	465	40.8%
Total	48.8	13,201	22.9	8,682	60.3%



Kennewick ONLY – EMS Transport Destinations

Kennewick ONLY – #1 Transport Destination: Trios Southridge Hospital

#2 Transport Destination: Kadlec Regional Medical Center

Hospital	Duration	Number of EMS Calls	Transports per Day	% of Total
(TSH) Trios Southridge Hospital	0:51:54	4,355	11.9	77.4%
(KRMC) Kadlec Regional Medical Center	1:05:24	872	2.4	15.5%
(KERK) Kadlec Free Standing ER	0:47:00	324	0.9	5.8%
(LMC) Lourdes Medical Center	1:02:54	27	0.1	0.5%
Other	0:41:18	45	0.1	0.8%
Total	0:53:42	5,623	15.4	100%



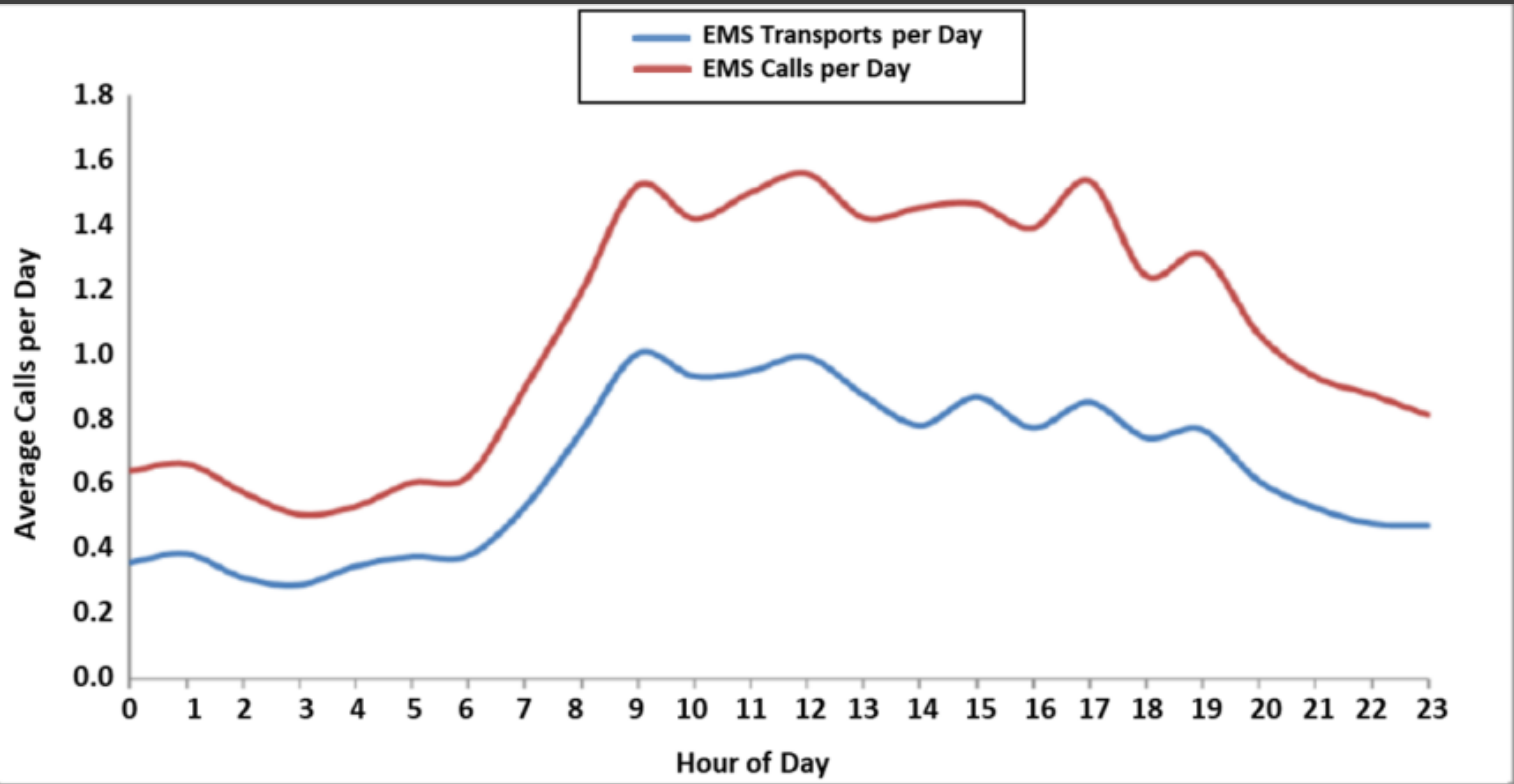
Tri-Cities Area – EMS Transport Destinations

All Tri-Cities Agencies (Combined) – #1 Transport Destination: Kadlec Regional Medical Center
 #2 Transport Destination: Trios Southridge Hospital

Hospital	Duration (minute)	Number of EMS Calls	Transports per Day	% of Total
(KRMC) Kadlec Regional Medical Center	49.2	6,040	16.5	45.8%
(TSH) Trios Southridge Hospital	52.3	4,521	12.4	34.2%
(LMC) Lourdes Medical Center	41.1	2,153	5.9	16.3%
(KERK) Kadlec Free Standing ER	47.6	335	0.9	2.5%
Other	42.2	152	0.4	1.2%
Total	48.8	13,201	36.2	100%



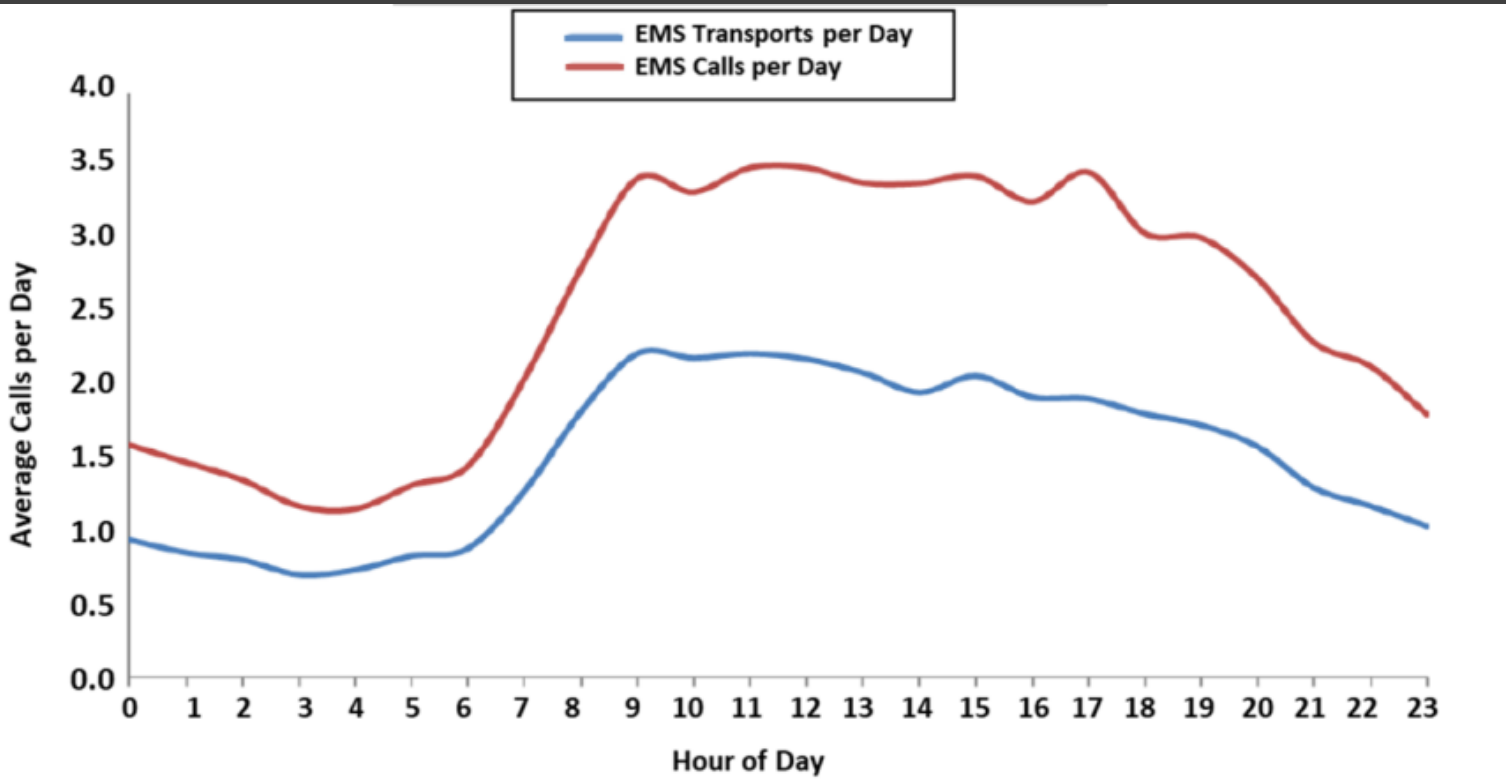
Kennewick ONLY – EMS Calls vs. Transports



Hour	Number of EMS Transports	Number of EMS Calls	EMS Transports per Day and per Hour	EMS Calls per Day and per Hour	Transport Rate
0	131	234	0.4	0.6	56.0
1	141	242	0.4	0.7	58.3
2	114	210	0.3	0.6	54.3
3	106	185	0.3	0.5	57.3
4	127	194	0.3	0.5	65.5
5	138	221	0.4	0.6	62.4
6	139	228	0.4	0.6	61.0
7	194	328	0.5	0.9	59.1
8	279	436	0.8	1.2	64.0
9	367	556	1.0	1.5	66.0
10	341	518	0.9	1.4	65.8
11	347	548	1.0	1.5	63.3
12	363	569	1.0	1.6	63.8
13	320	519	0.9	1.4	61.7
14	286	531	0.8	1.5	53.9
15	318	535	0.9	1.5	59.4
16	283	508	0.8	1.4	55.7
17	312	561	0.9	1.5	55.6
18	272	454	0.7	1.2	59.9
19	281	478	0.8	1.3	58.8
20	223	388	0.6	1.1	57.5
21	193	340	0.5	0.9	56.8
22	175	320	0.5	0.9	54.7
23	173	297	0.5	0.8	58.2



Tri-Cities Area – EMS Calls vs. Transports



Hour	Number of EMS Transports	Number of EMS Calls	EMS Transports per Day	EMS Calls per Day	Transport Rate
0	343	580	0.9	1.6	59.1
1	311	537	0.9	1.5	57.9
2	293	493	0.8	1.4	59.4
3	256	428	0.7	1.2	59.8
4	268	421	0.7	1.2	63.7
5	303	480	0.8	1.3	63.1
6	322	528	0.9	1.4	61.0
7	466	747	1.3	2.0	62.4
8	664	1,021	1.8	2.8	65.0
9	809	1,246	2.2	3.4	64.9
10	798	1,212	2.2	3.3	65.8
11	809	1,273	2.2	3.5	63.6
12	795	1,273	2.2	3.5	62.5
13	761	1,235	2.1	3.4	61.6
14	712	1,234	2.0	3.4	57.7
15	753	1,252	2.1	3.4	60.1
16	700	1,188	1.9	3.3	58.9
17	696	1,262	1.9	3.5	55.2
18	658	1,109	1.8	3.0	59.3
19	630	1,098	1.7	3.0	57.4
20	576	996	1.6	2.7	57.8
21	473	836	1.3	2.3	56.6
22	428	777	1.2	2.1	55.1
23	377	657	1.0	1.8	57.4



Kennewick ONLY – Performance Standards

Current incident performance measurements are based on:

- Requirements outlined in Washington State **RCW 35.103**
- Adoption of Resolution 08-06 in **2008** by Kennewick City Council

2016
REVISED CODE OF
WASHINGTON

RCW

2



Kennewick ONLY – CURRENT Standards

- First arriving unit vs. effective response force
- Time/life critical vs. non-time/life critical

Response Goals: 1st Arriving Unit on Scene			90% of the time
Incident Type	Minimum # People	Response GOAL	
Emergency Medical - Advanced Life Support (ALS)	2	0:05:00	
Emergency Medical - Basic Life Support (BLS)	2	0:07:00	
Fire Suppression	3	0:06:45	
Technical Rescue	3	0:06:45	
Hazardous Materials	3	0:06:45	

Response Goals: Effective Response Force			90% of the time
Incident Type	Minimum # People	Response GOAL	
Emergency Medical (ALS) - Cardiac Arrest	7	0:09:00	
Fire Suppression - Residential Structure	12	0:09:45	
Fire Suppression - Commercial Structure	15	0:09:45	



Kennewick ONLY – 1st Arriving Unit Averages

(Shown by Program Category)

Program	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
EMS	0:01:18	0:04:42	0:06:00	8,818
Fire	0:01:36	0:04:06	0:05:42	267
Rescue	0:01:30	0:05:36	0:07:06	32
Hazardous Condition	0:02:06	0:05:18	0:07:24	106
Service	0:01:06	0:05:18	0:06:24	1,470
Good Intent	0:01:12	0:04:36	0:05:48	798
False Alarm and False Call	0:01:54	0:04:36	0:06:36	534
Other	0:01:12	0:03:48	0:05:00	15
Total	0:01:18	0:04:48	0:06:06	12,040



Kennewick ONLY – 1st Arriving Unit Averages

(Shown by Station Area)

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 61	0:01:24	0:04:30	0:05:54	2,736
Station 62	0:01:06	0:04:24	0:05:36	3,297
Station 63	0:01:18	0:05:00	0:06:24	2,090
Station 64	0:01:18	0:05:12	0:06:30	2,454
Station 65	0:01:24	0:05:00	0:06:24	1,463
Total	0:01:18	0:04:48	0:06:06	12,040



Kennewick ONLY – 1st Arriving 90th Percentile

(Shown by Program Category)

Program	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
EMS	0:02:19	0:07:45	0:09:07	8,818
Fire	0:02:53	0:06:39	0:08:42	267
Rescue	0:03:04	0:10:04	0:11:24	32
Hazardous Condition	0:03:26	0:08:17	0:10:46	106
Service	0:02:21	0:09:09	0:10:31	1,470
Good Intent	0:02:32	0:07:48	0:09:22	798
False Alarm and False Call	0:03:13	0:07:50	0:09:56	534
Other	0:02:00	0:06:39	0:07:23	15
Total	0:02:26	0:07:55	0:09:23	12,040



Kennewick ONLY – 1st Arriving 90th Percentile (Shown by Station Area)

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 61	0:02:34	0:07:39	0:09:06	2,736
Station 62	0:02:19	0:07:10	0:08:35	3,297
Station 63	0:02:30	0:08:12	0:09:44	2,090
Station 64	0:02:25	0:08:41	0:10:07	2,454
Station 65	0:02:21	0:08:16	0:09:42	1,463
Total	0:02:26	0:07:55	0:09:23	12,040



Tri-Cities Area – Average vs. 90th Percentile

(Shown by Station Area)

Average – 1st Arrival Performance

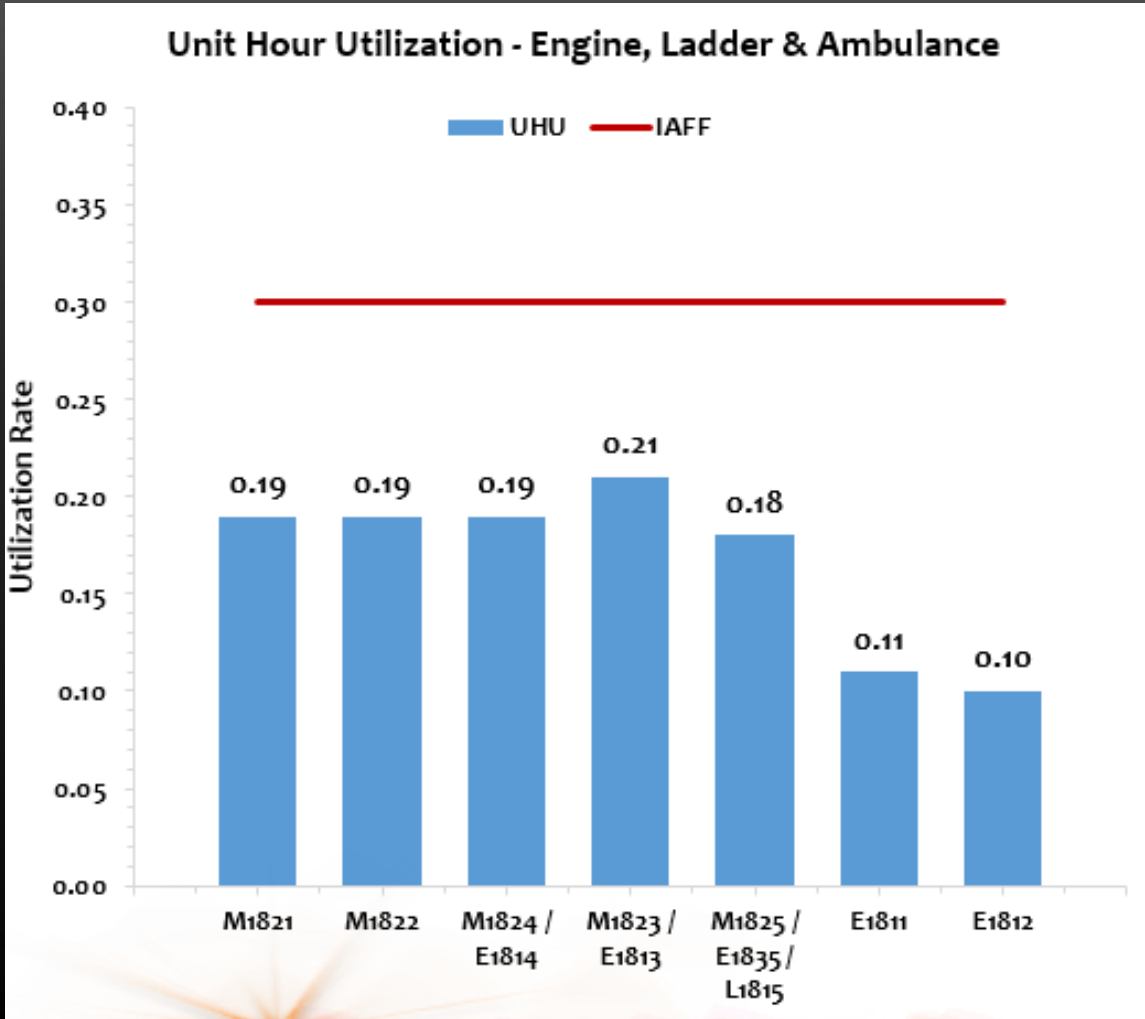
First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 84	1.0	4.1	5.1	679
Station 73	1.0	4.3	5.3	2,401
Station 71	1.1	4.3	5.4	2,411
Station 82	1.1	4.3	5.4	867
Station 62	1.1	4.4	5.6	3,303
Station 81	1.0	4.6	5.6	1,225
Station 83	1.0	4.7	5.7	1,412
Station 61	1.4	4.5	5.9	2,758
Station 74	1.0	5.0	6.0	1,331
Station 72	1.1	5.0	6.1	2,523
Station 63	1.3	5.0	6.4	2,095
Station 65	1.4	5.0	6.5	1,466
Station 64	1.3	5.3	6.6	2,468
Station 75	1.2	5.5	6.8	65
Total	1.2	4.7	5.9	25,004

90th Percentile – 1st Arrival Performance

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 82	1.8	6.0	7.3	867
Station 84	1.9	6.5	7.6	679
Station 71	2.1	7.0	8.2	2,411
Station 83	1.9	7.4	8.6	1,412
Station 73	1.8	7.3	8.4	2,401
Station 81	1.9	7.5	8.5	1,225
Station 62	2.3	7.2	8.6	3,303
Station 61	2.6	7.7	9.2	2,758
Station 63	2.5	8.3	9.8	2,095
Station 65	2.4	8.3	9.7	1,466
Station 74	2.0	9.0	9.9	1,331
Station 72	2.0	8.7	10.0	2,523
Station 64	2.4	8.8	10.3	2,468
Station 75	2.2	9.9	11.3	65
Total	2.2	7.8	9.1	25,004



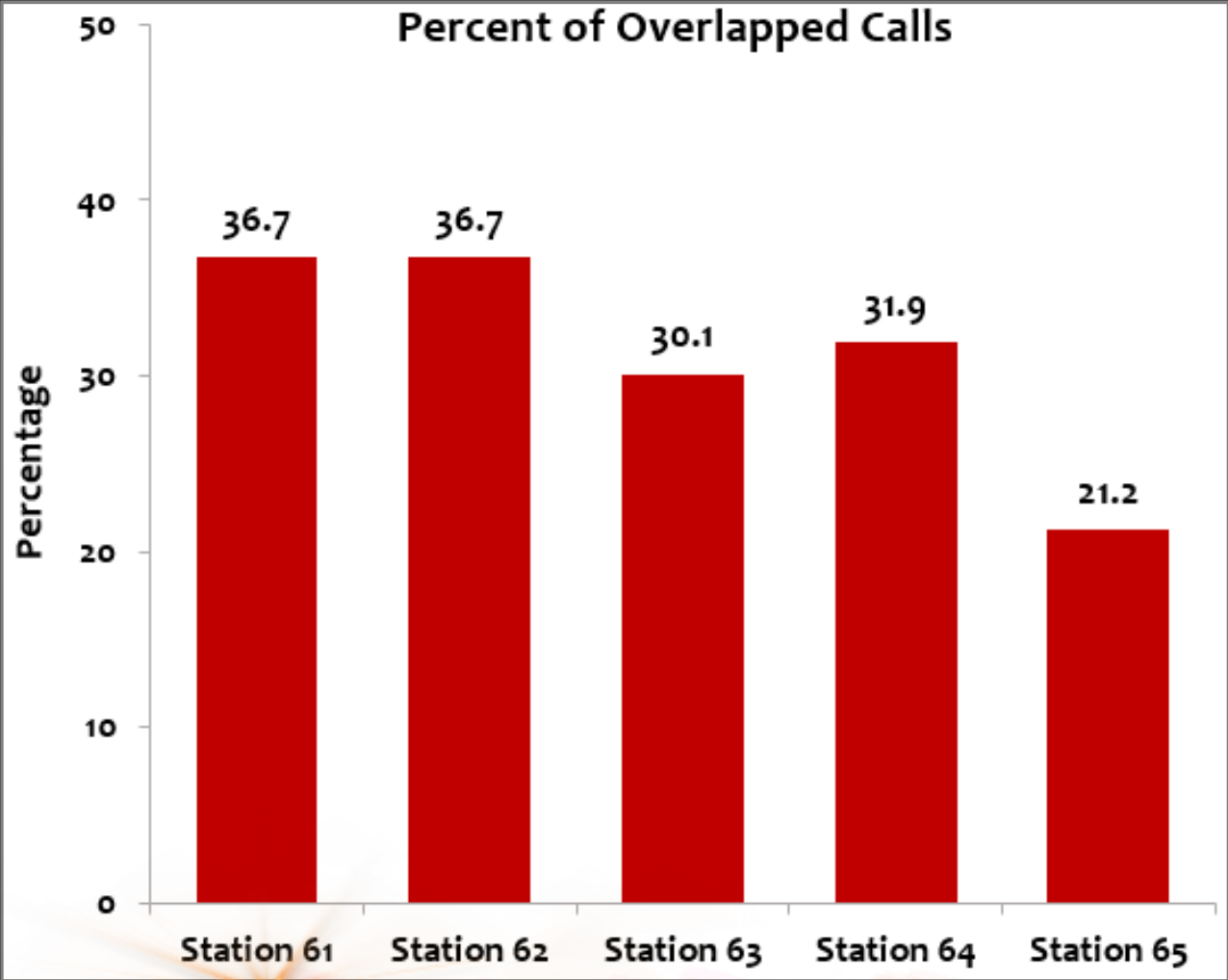
Kennewick ONLY – Unit Hour Utilization



Unit	Unit Description	Station	Busy Hours	UHU	IAFF
M1821	Ambulance	61	1,695	0.19	0.30
M1822	Ambulance	62	1,626	0.19	0.30
M1824 / E1814	Ambulance / Engine	64	1,635	0.19	0.30
M1823 / E1813	Ambulance / Engine	63	1,798	0.21	0.30
M1825 / E1835 / L1815	Ambulance / Engine / Ladder	65	1,574	0.18	0.30
E1811	Engine	61	964	0.11	0.30
E1812	Engine	62	844	0.1	0.30



Kennewick ONLY – Overlapping Calls

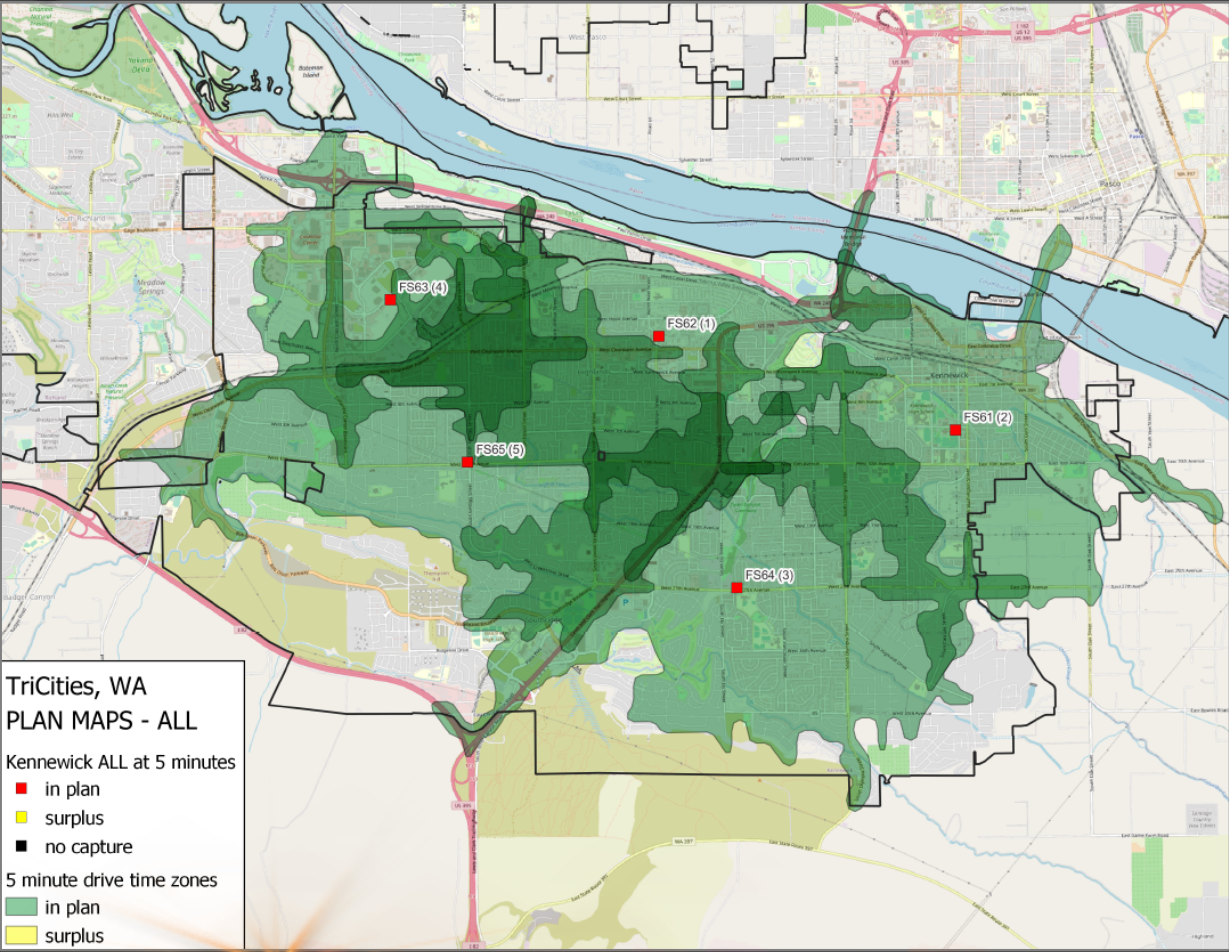


Response Area	Overlapped Calls	Total Calls	Percent of Overlapped Calls
Station 61	1,097	2,989	36.7
Station 62	1,325	3,607	36.7
Station 63	691	2,299	30.1
Station 64	835	2,617	31.9
Station 65	346	1,630	21.2

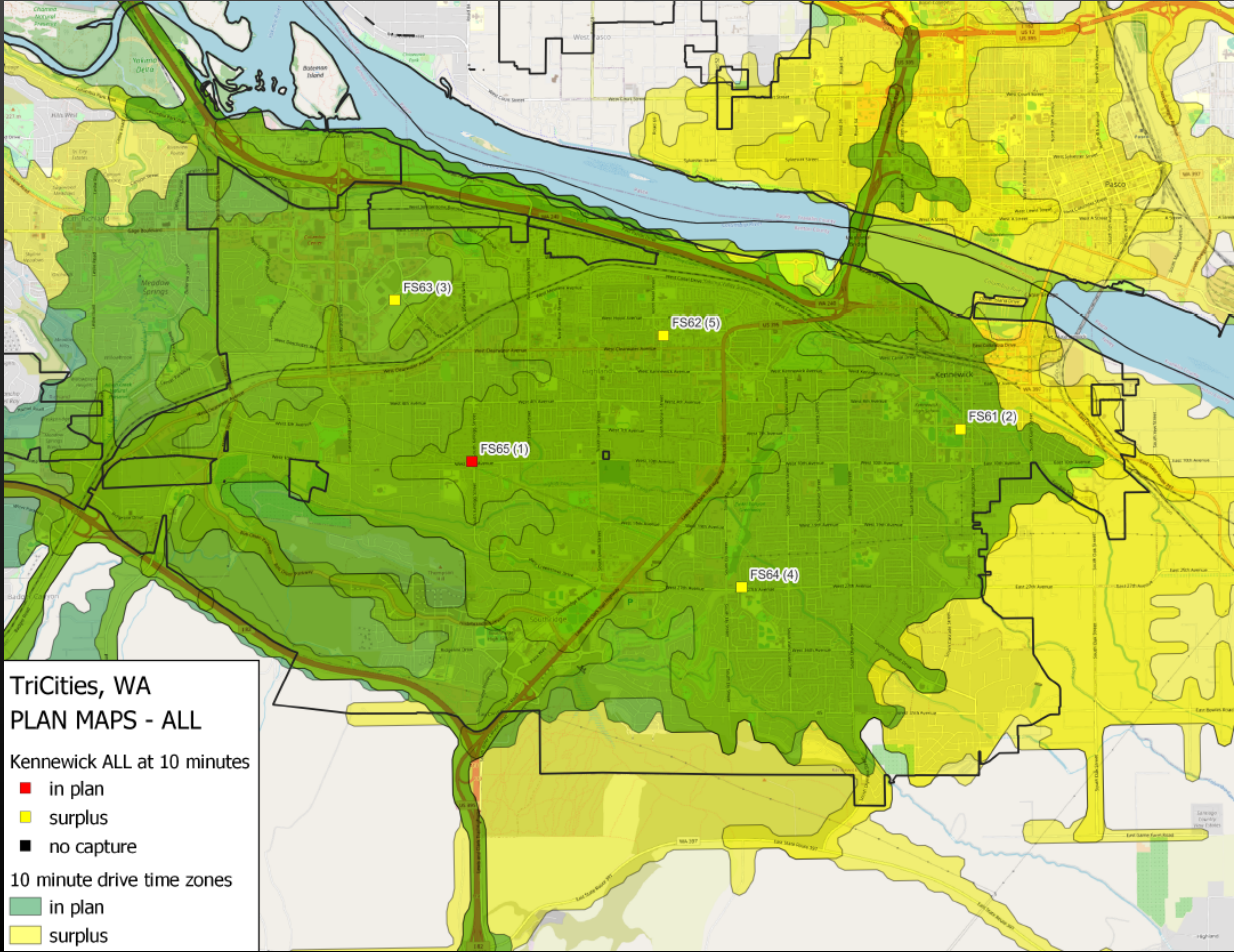


Kennewick ONLY – 5 vs. 10-Min. Travel Time

5-Minute Travel Time



10-Minute Travel Time





KFD's Immediate Needs

In order to provide services at a level consistent with the needs and expectations of our community:

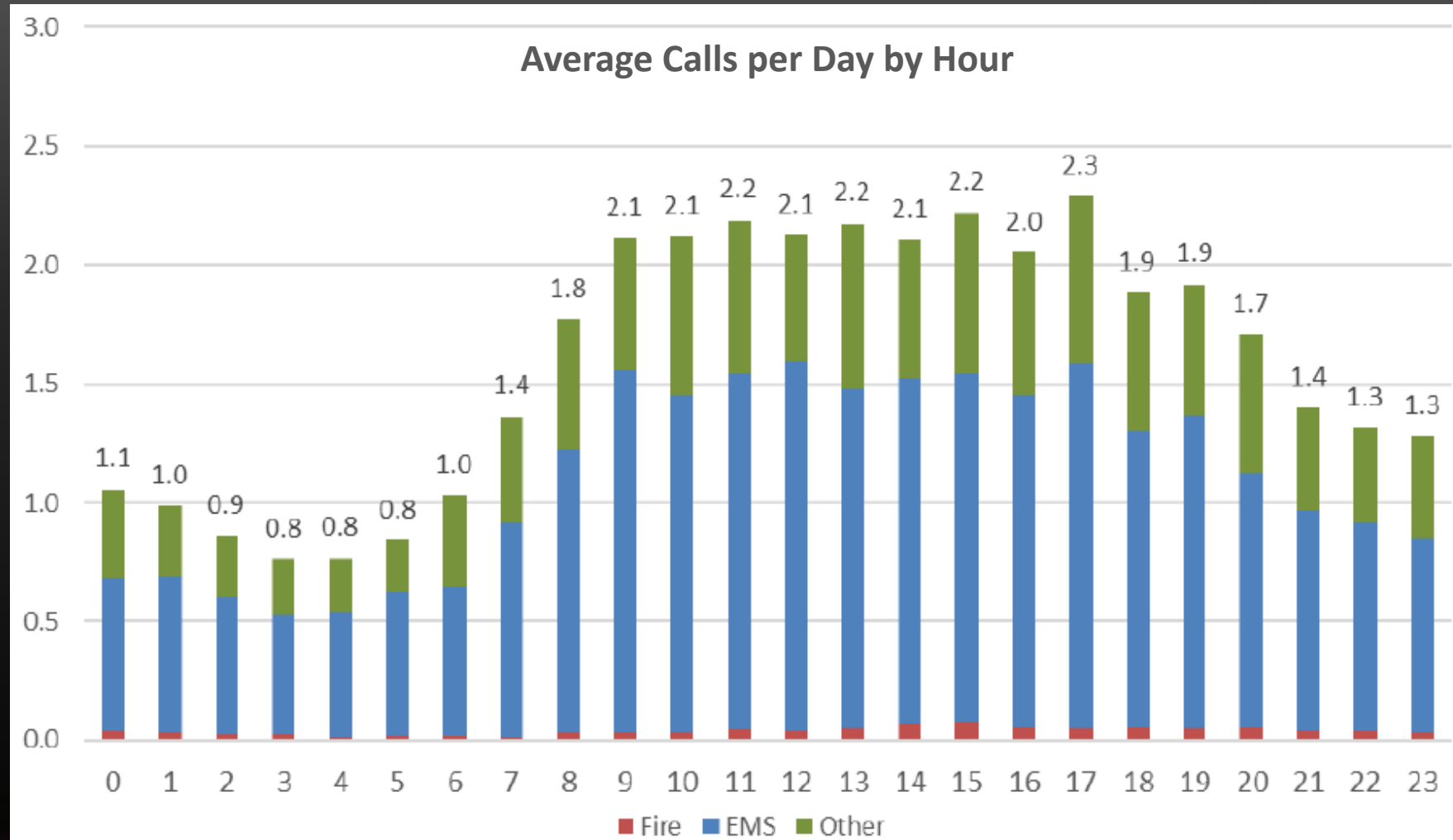
1. Initiate a peak hour Basic Life Support (BLS) unit
2. Construct and staff Station 6
3. Ensure dedicated medic units at Stations 1 & 2 are maintained
4. Align effective response force with municipal partners
5. Adopt recommended response times





Peak Demand Times

1. What calls could potentially be reduced and/or eliminated?
2. Are the right resources being dispatched? Is incident response based on outcomes?
3. What are the trigger-points for adding more resources?





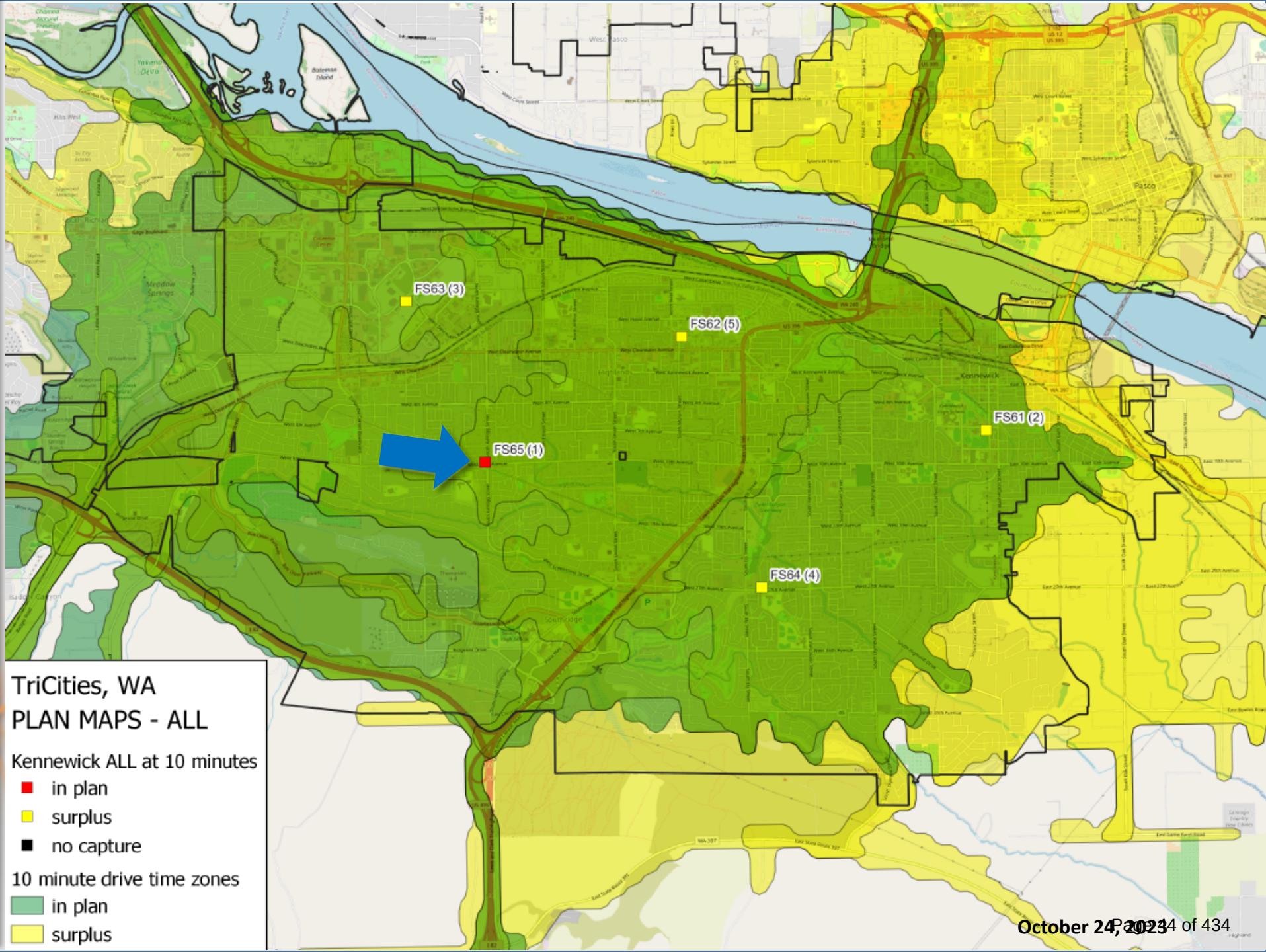
Incident Severity Counts

Medical Level	Transport		Non-Transport		Transport Rate
	Duration	Number of Calls	Duration	Number of Calls	
Med 1	0:53:02	359	0:25:49	184	66.1%
Med 2	0:53:46	3,478	0:25:55	1,433	70.8%
Med 3	0:52:10	1,464	0:26:24	400	78.5%
Med 4	1:05:31	124	0:52:10	124	50.0%
MVA	0:54:01	155	0:24:50	93	62.5%
MVAE	1:09:15	16	0:41:43	5	76.2%
Other	1:04:48	27	0:20:17	1,538	1.7%
EMS Total	0:53:40	5,623	0:24:31	3,777	59.8%

New BLS Unit



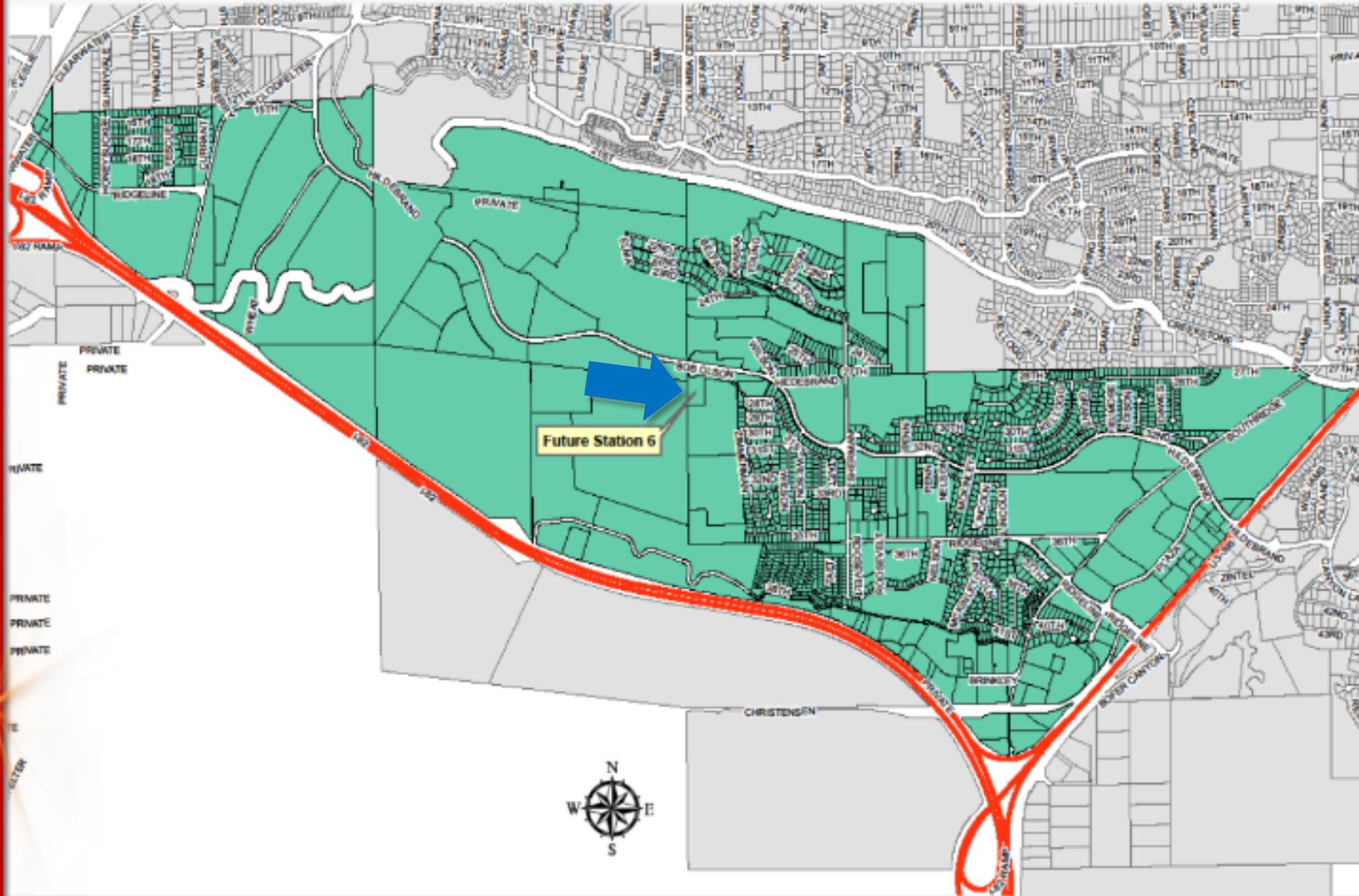
- Strategic coverage
- Approx. **98.7%** at **10 min.** response time
- Requires one additional BLS unit
- Located at Fire Station #5



Build Station #6

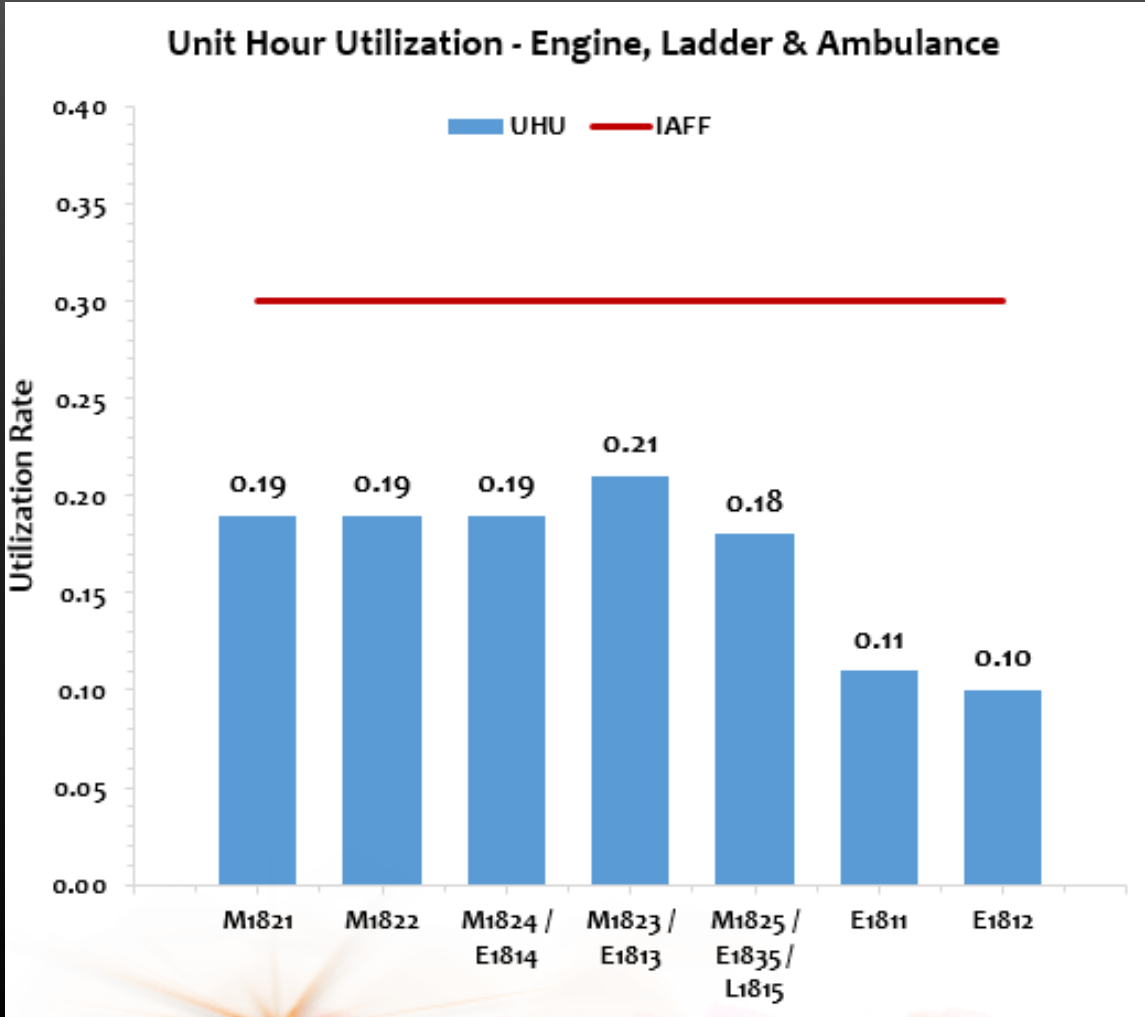


- Increasing call volume
- Significant growth is coming in Station 6 area
- Residential vs. commercial development
- Relieve the system





Value of Station 1 & 2 Dedicated Medic Units



Unit	Unit Description	Station	Busy Hours	UHU	IAFF
M1821	Ambulance	61	1,695	0.19	0.30
M1822	Ambulance	62	1,626	0.19	0.30
M1824 / E1814	Ambulance / Engine	64	1,635	0.19	0.30
M1823 / E1813	Ambulance / Engine	63	1,798	0.21	0.30
M1825 / E1835 / L1815	Ambulance / Engine / Ladder	65	1,574	0.18	0.30
E1811	Engine	61	964	0.11	0.30
E1812	Engine	62	844	0.1	0.30



Effective Response Force

Minimum amount of resources (*people and apparatus*) required to stop the escalation of an emergency

- Sending the appropriate number and type of emergency response units is important
- Regional alignment is equally important
- Municipal fire departments met in September 2023
- Changes will be implemented in late spring of 2024





Response Time Recommendations

* Times shown below reflect Total Response Time (Turnout Time + Travel Time)

Response: 1st Arriving Unit on Scene			90% of the time	90% of the time		90% of the time
Incident Type	Minimum # People	Response Times 2022	Response GOAL			Recommended GOAL
Emergency Medical - Advanced Life Support (ALS, Med 4)	2	0:06:46	0:05:00			0:06:00
Emergency Medical - Advanced Life Support (ALS, Med 3)	2	0:07:34	0:05:00			0:09:00
Emergency Medical - Basic Life Support (BLS, Med 1 & 2)	2	0:09:26	0:07:00			0:11:00
Fire Suppression (All Types)	3	0:08:43	0:06:45			0:08:00
Technical Rescue	3	0:10:01	0:06:45			0:08:00
Hazardous Materials	3	0:10:07	0:06:45			0:08:00

Response: Effective Response Force			90% of the time	90% of the time		90% of the time
Incident Type	Minimum # People	Response Times 2022	Response GOAL			Recommended GOAL
Emergency Medical (ALS, Med 4) - Cardiac Arrest	7	0:11:09	0:09:00			0:09:00
Fire Suppression - Residential Structure	12	0:13:43	0:09:45			0:12:00
Fire Suppression - Commercial Structure	15	0:15:31	0:09:45			0:15:00



Mid and Long-Term Needs

Mid and long-term needs go beyond what we are discussing this evening

- A phased-in approach has been, and should continue to be, our practice
- Monitor unit hour utilization and concurrent calls for needed system modifications
- KFD is currently over-threshold on cross-staffed units for maximum reliability

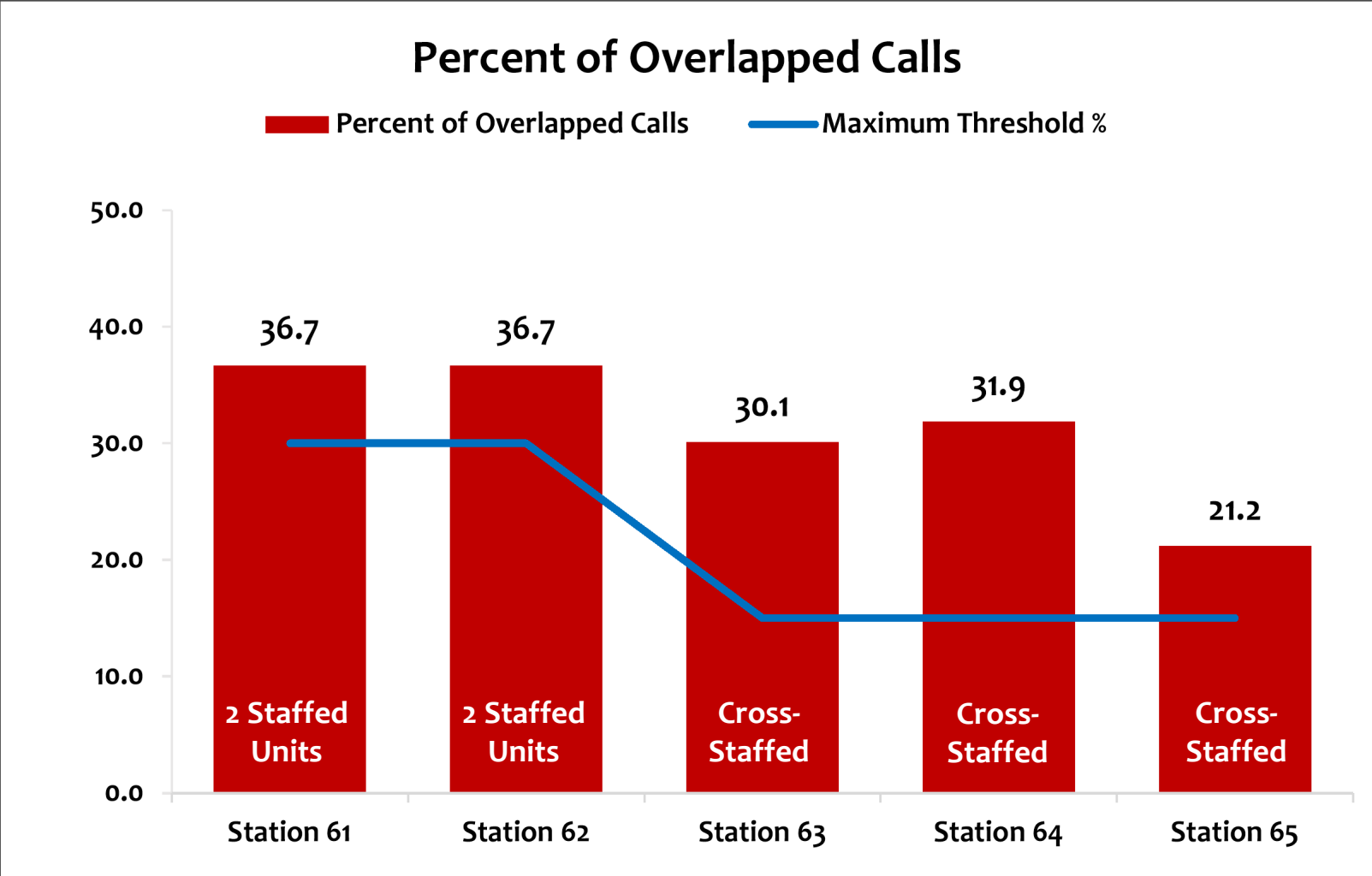




Mid and Long-Term Needs (cont.)

- Threshold to separate cross-staffed units = 1500 Calls & 15% call concurrency

Response Area	Total Calls	Percent of Overlapped Calls	Dedicated Units or Cross-Staffed?
Station 61	2,989	36.7%	2 Dedicated Units
Station 62	3,607	36.7%	2 Dedicated Units
Station 63	2,299	30.1%	Cross-Staffed
Station 64	2,617	31.9%	Cross-Staffed
Station 65	1,630	21.2%	Cross-Staffed





Mid and Long-Term Needs (cont.)

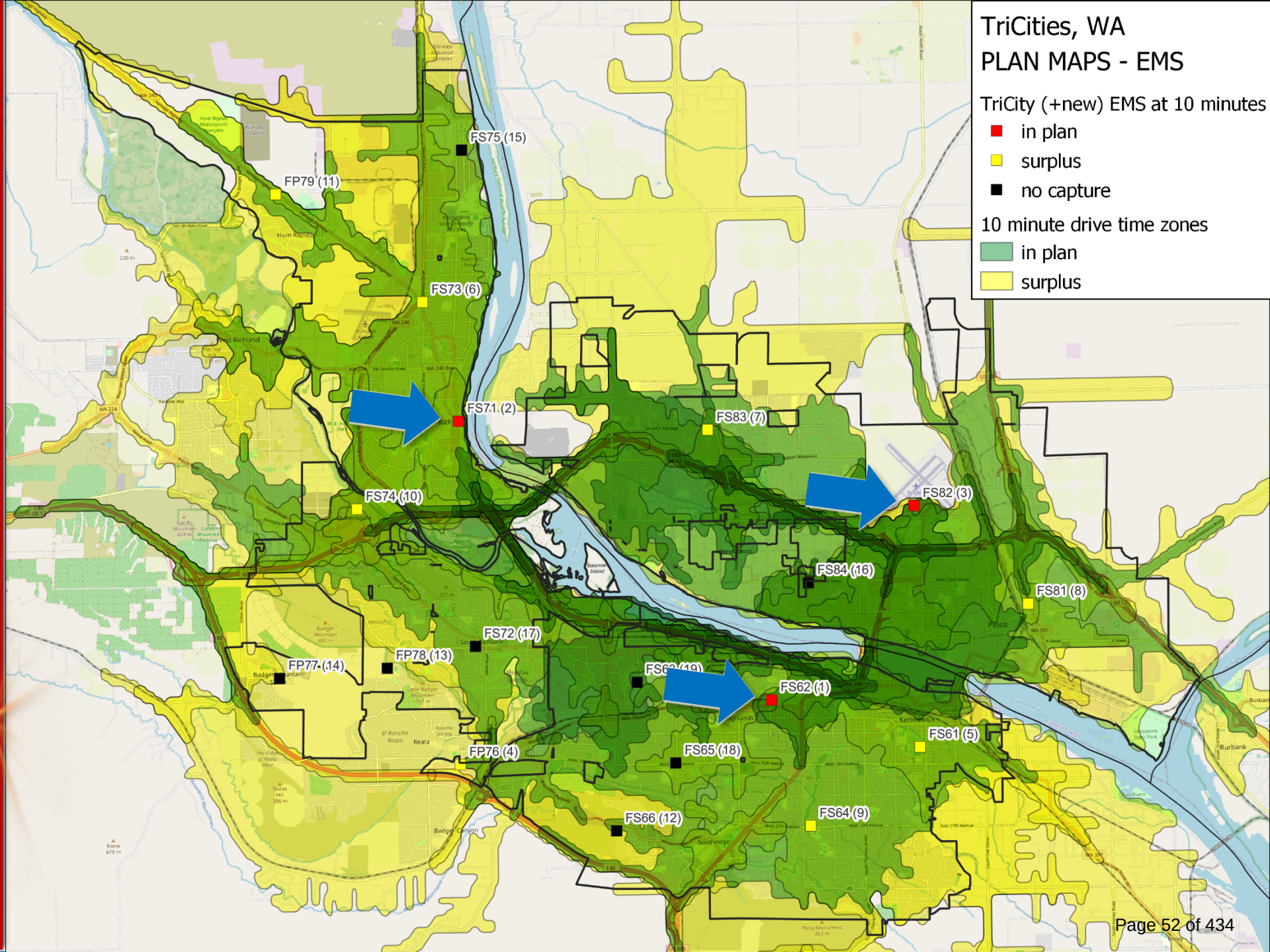
- Ensure continued alignment of effective response forces
- Key areas of focus should include:
 1. Developing regional basic life support response capabilities
 2. Improving depth in support areas (i.e. Training/EMS, and the Fire Prevention Division with additional assistance



Regional Alignment



- Phased approach to additional peak-hour coverage in Kennewick and throughout the Tri-Cities area





Next Steps

- Council to adopt up-to-date response times
- Complete the Cost of Service Study
- Evaluate funding options for immediate needs and provide to Council for consideration and approval
- Address issues associated with implementing a BLS Peak Hour unit
- Develop Fire Station #6 construction timeline
- Begin the process of selecting and hiring approved personnel





Any Questions?



August 2023

Draft Data Analysis



Kennewick Fire Department
Kennewick, Washington

Prepared by:



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CONSULTANT REPORT

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DRAFT

METHODOLOGY

We collected CAD and ePCR data from January 1, 2018, through December 31, 2022 from Kennewick Fire Department (KFD). In the first two tables, we provided five-year stats from 2018 to 2022. We focused our analysis on data from 2022 in the remainder of this report.

In this report, we utilized two distinct measures of call volume and workload. First, is the number of requests for service that are defined as either “dispatches” or “calls”. Dispatches/calls are the number of times a distinct incident was created. Conversely, “responses” are the number of times that an individual unit (or units) responded to a call. Responses will be utilized on all Unit and Station level analyses, which account for all elements of workload and performance. Calls have been categorized as EMS, Fire, Rescue, Hazard, Service, Good intent, false alarm and other, respectively. We classified call types using incident description. Transport calls are defined as calls with an established start time for the transport or at hospital times.

Please note that dispatch center could not export the time citizens initiated the calls. In the analysis, we focused our analysis on KFD’s turnout and travel time performance.

EXECUTIVE SUMMARY

A total of 13,982 requests were recorded in 2022, averaging 38.3 calls per day. Of those, 67% or 25.8 per day were EMS requests. From dispatch to clear, all KFD units spent a total of 10,981 hours, averaging 30.1-unit hours per day. For 41% of calls, KFD responded to 2 or more units. On average, 1.6 units responded to each call. For EMS calls, 60% resulted in transporting patients. The duration for EMS transport calls averaged 54 minutes, which is 2.2 times longer than a non-transport EMS call. The number one transport destination was Trios Southridge Hospital, accounting for 77.4% of the total, and the average duration was 52 minutes. The second highest transport destination was Kadlec Regional Medical Center, which accounted for 15.5% of the total, with an average duration of 65 minutes.

KFD staffed 5 stations including 3 cross staffed stations. At any given time, seven apparatus are available to dispatch including 1 ladder truck and 4 front-line engines. Ambulance units contributed 60% of total unit responses, averaging 37.5-unit responses per day. Engine and ladder units contributed 31% of total unit response and averaged 19.3 per day. The UHU of the seven units (ambulances, engines, a ladder truck) combined were 16.5%.

Looking at response time performance of the first arriving KFD units, the mean (average) turnout time was 78 seconds (0:01:18), travel time was 288 seconds (0:04:48), and turnout and travel time was 366 seconds (0:06:06). The performance for turnout time at the 90th percentile was 146 seconds (0:02:26), travel time was 475 seconds (0:07:55), and turnout and travel time was 563 seconds (0:09:23).

We also investigated whether the response time performance deteriorated when there were fewer engines, truck, or ambulances available. KFD staffed 7 units 24/7. KFD had 6 or 7 units available to respond to 66% of the calls. In 0.5% of the calls, all seven units were dispatched and tied to other calls. In these 0.5% of calls, the 90th percentile time exceeded 11 minutes, driven by the longer travel time.

COMMUNITY RESPONSE HISTORY

The total number of calls are between 9,886 in 2018 and 13,982 in 2022. In the past 5 years, the demand has grown at a CAGR (compound annual growth rate) of 9.1%. Demand grew 15.7% between 2021 and 2022. In 2022, the number of calls averaged 38.3 per day, and EMS calls averaged 25.8 per day or 67% of the total calls.

Table 1: 2018 – 2022: Number of Incidents by Call Category

Program	Number of Calls				
	2018	2019	2020	2021	2022
EMS	7,115	7,459	7,333	8,582	9,400
Fire	308	262	276	355	346
Rescue	21	22	24	26	36
Hazardous Condition	92	117	108	107	113
Service	873	906	1,203	1,200	1,654
Good Intent	1,007	1,013	961	1,285	1,852
False Alarm and False Call	449	504	493	507	560
Other	21	29	20	19	21
Total	9,886	10,312	10,418	12,081	13,982
Calls per Day	27.1	28.3	28.5	33.1	38.3
Total Calls YoY Growth		4.3%	0.8%	16.3%	15.7%
EMS Calls Percentage	72%	72%	70%	71%	67%
EMS Calls per Day	19.5	20.4	20.0	23.5	25.8
EMS Calls YoY Growth		4.8%	-2.0%	17.4%	9.5%

The number of individual unit responses will be more reflective of total department workload since on average 1.6 KFD units responded to an incident in 2022. In the past 5 years, the total number of unit responses has grown at a CAGR of 10.4%. The number of unit responses from KFD increased by 10.3% between 2021 and 2022.

Table 2: 2018 – 2022: Number of KFD Unit Responses by Call Category

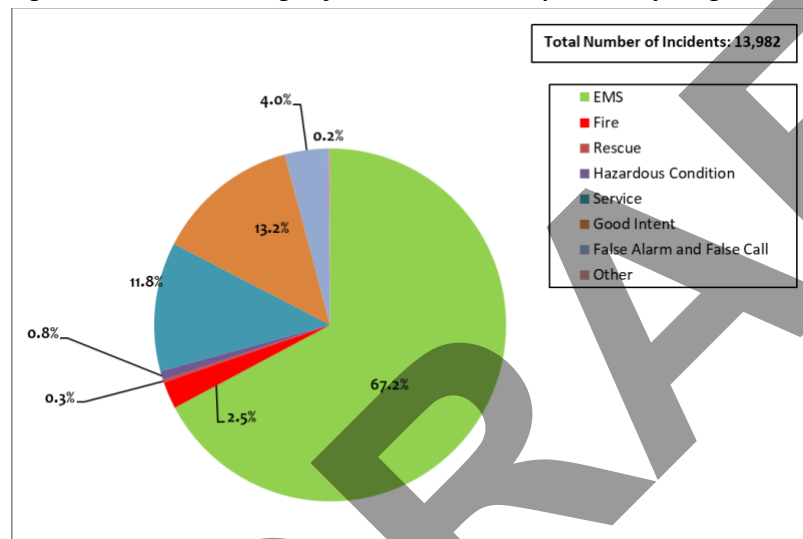
Program	Number of KFD Unit Responses				
	2018	2019	2020	2021	2022
EMS	10,622	11,722	12,054	14,207	15,469
Fire	801	822	808	1,098	1,031
Rescue	37	41	65	67	98
Hazardous Condition	189	258	220	226	215
Service	1,049	1,124	1,539	1,620	2,258
Good Intent	1,498	1,541	1,511	2,017	2,759
False Alarm and False Call	1,015	1,155	1,106	1,266	784
Other	27	50	29	37	39
Total	15,238	16,713	17,332	20,538	22,653
Unit Responses per Day	41.7	45.8	47.4	56.3	62.1
KFD Responses YoY Growth		9.7%	3.4%	18.8%	10.3%

Note: Administrative and reserve units are included.

Table 3: 2022: Number of Incidents by Category

Call Category	Number of Calls	Calls per Day	Call Percentage
EMS	9,400	25.8	67.2%
Fire	346	0.9	2.5%
Rescue	36	0.1	0.3%
Hazardous Condition	113	0.3	0.8%
Service	1,654	4.5	11.8%
Good Intent	1,852	5.1	13.2%
False Alarm and False Call	560	1.5	4.0%
Other	21	0.1	0.2%
Total	13,982	38.3	100.0%

Figure 1: 2022: Percentage of Total Incidents Dispatched by Program



All KFD units combined made 22,653 responses in 2022 and were busy on calls 10,981 hours. On average, each response lasted 29.1 minutes from dispatched to clear.

Table 4: 2022: Number of Calls, Number of Responses, and Total Busy Time by Program

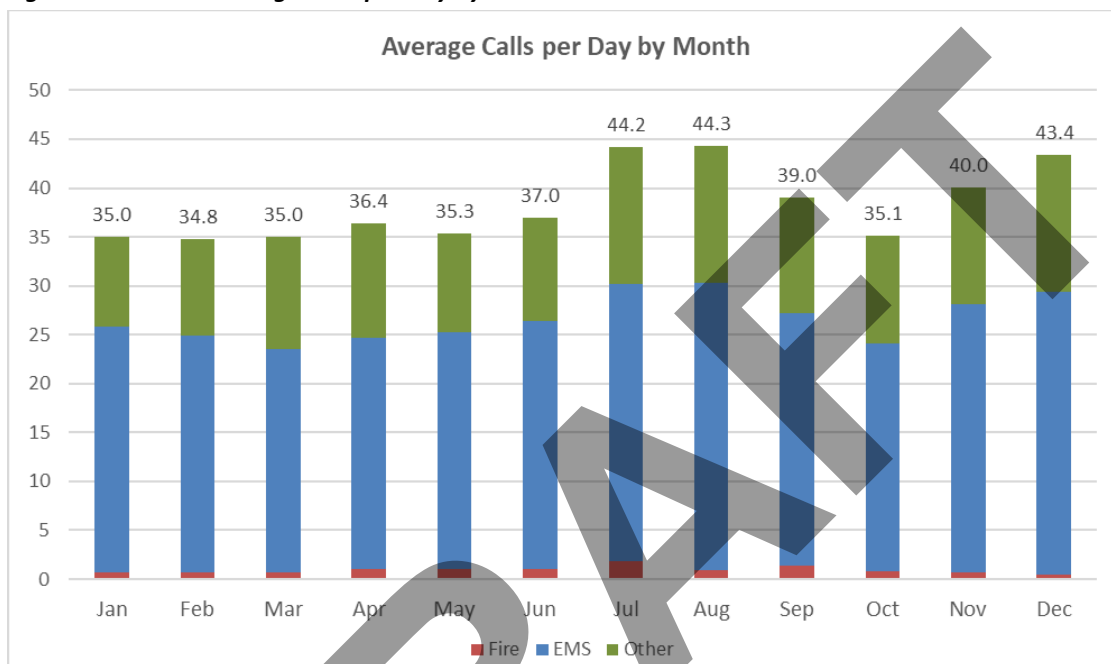
Program	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response	Percentage of Total Busy Hours
EMS	9,400	15,469	1.6	8,350	32.4	76.0%
Fire	346	1,031	3.0	1,278	74.4	11.6%
Rescue	36	98	2.7	47	28.5	0.4%
Hazardous Condition	113	215	1.9	95	26.6	0.9%
Service	1,654	2,258	1.4	557	14.8	5.1%
Good Intent	1,852	2,759	1.5	381	8.3	3.5%
False Alarm and False Call	560	784	1.4	248	19.0	2.3%
Other	21	39	1.9	25	38.0	0.2%
Total	13,982	22,653	1.6	10,981	29.1	100.0%

Note: Administrative and reserve units are included.

Temporal analyses were conducted to evaluate patterns in community demands. These measures examined the frequency of requests for service by month, day of week, and hour of day. For presentation purposes, calls other than fire and EMS calls were grouped into the other category.

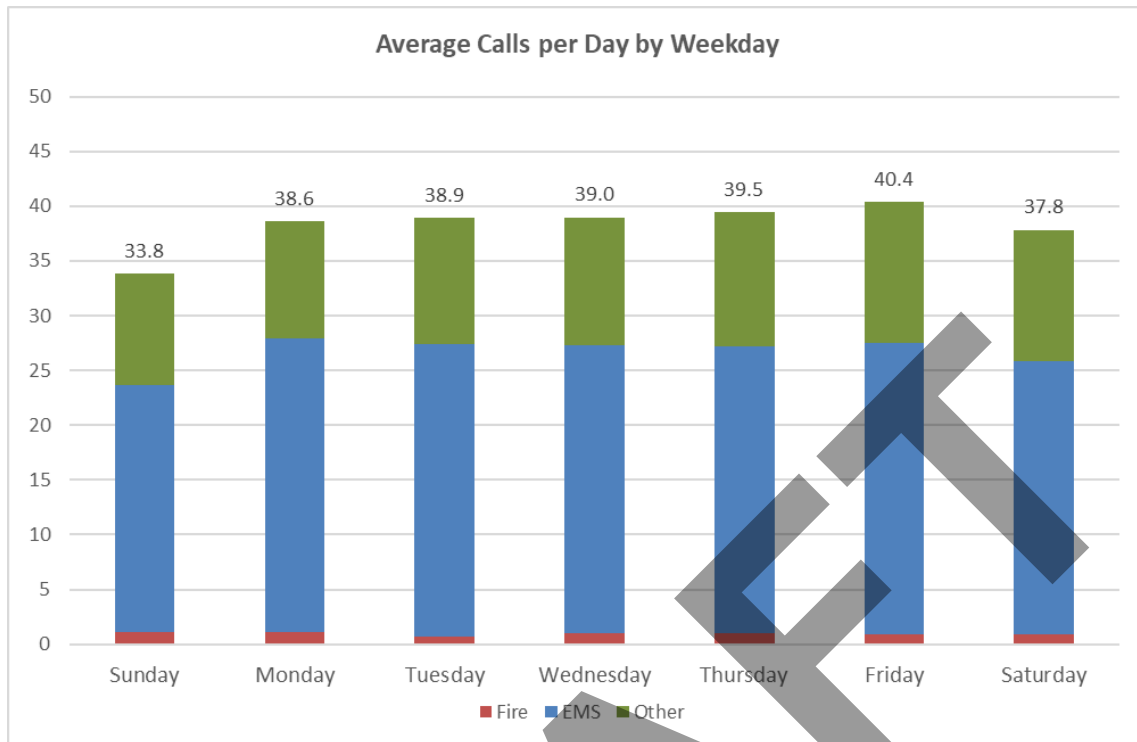
The top three months with the most demands in the descending order are: August (44.3 per day), July (44.2 per day) and December (43.4 per day).

Figure 2: Overall: Average Calls per Day by Month



Similar analyses were conducted for requests by day of week. The data revealed that there is variability in the demand for services by day of week. Sunday was the lowest for the week at 33.8 calls per day. Friday has the highest frequency of requests for services at 40.4 calls per day.

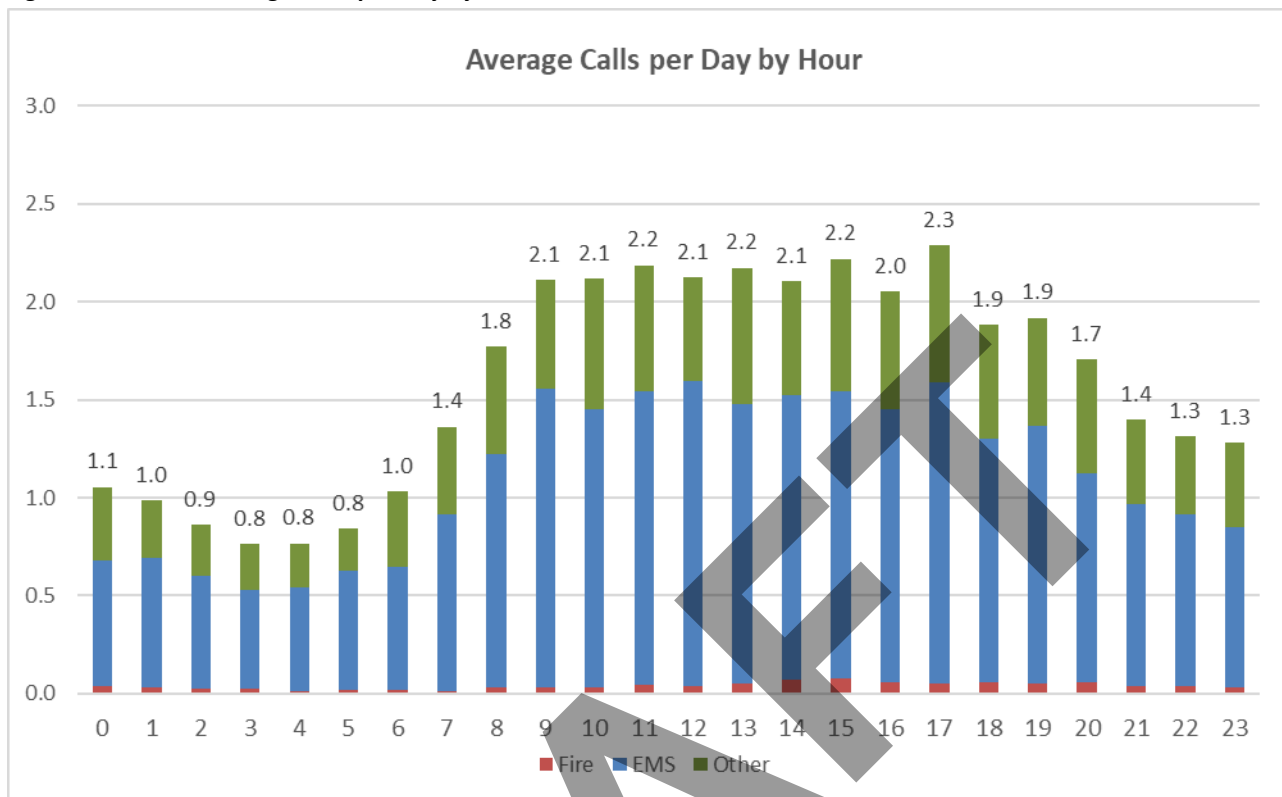
Figure 3: Overall: Average Calls per Day by Weekday



Overall demands were evaluated by the hour of the day. Considerable variability exists in the time of day that requests for emergency services are received. The hours that from midnight to 0600 are low demand hours of the day. There are more calls during the middle of the day, specifically between 0900 and 1700, with an average of over 2.0 calls per day and per hour. The hour with the peak demand is at 1700.

To provide a more granular understanding of the community's demand for emergency services, this temporal analysis included the average number of calls per day and per hour. In other words, when referring to the figure below, the busiest hour is at 1700 with 835 calls during that hour. The average number of calls per day and per hour assumes those 835 calls were equally distributed. Therefore, the busiest hour per day would be at 1700 with an average at 2.3 calls per day and per hour. The second busiest hour is at 1500 with 810 calls during the hour, and averaged 2.2 calls per day and per hour.

Figure 4: Overall: Average Calls per Day by Hour



Overall, KFD's units made 22,653-unit responses. Ambulance units averaged 37.5-unit responses per day, engine units averaged 17.5 per day and the ladder truck (L815) averaged 1.8 per day. 80% of Ambulance responses were related to EMS calls.

Table 5: Number of KFD Unit Responses by Unit Type and Program

Unit Type	# of Responses								Total
	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm & False Call	Other	
Ambulance	10,911	21	122	1,363	11	5	32	1,236	13,701
Engine	3,383	533	586	890	130	21	38	812	6,393
Battalion Chief	943	94	174	374	51	7	18	144	1,805
Ladder Truck	188	129	104	126	22	4	10	60	643
Other	44	7	45	6	1	2	0	6	111
Total	15,469	784	1,031	2,759	215	39	98	2,258	22,653

Note: Administrative and reserve units are included.

Table 6: Average Number of KFD Unit Responses per Day by Unit Type and Program

Unit Type	# of Responses per Day								Total
	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm & False Call	Other	
Ambulance	29.9	0.1	0.3	3.7	0.0	0.0	0.1	3.4	37.5
Engine	9.3	1.5	1.6	2.4	0.4	0.1	0.1	2.2	17.5
Battalion Chief	2.6	0.3	0.5	1.0	0.1	0.0	0.0	0.4	4.9
Ladder Truck	0.5	0.4	0.3	0.3	0.1	0.0	0.0	0.2	1.8
Other	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Total	42.4	2.1	2.8	7.6	0.6	0.1	0.3	6.2	62.1

Note: Administrative and reserve units are included.

KFD has 5 stations. Ambulance 1822, 1821 and 1824 were the top three busiest units, and their average number of unit responses per day was 9.4, 7.5 and 7.1 respectively. E1811 was the busiest fire suppression unit, averaging 6.9 responses per day.

Table 7: Overall Workload by Unit in the Descending Order

Unit ID	Unit Description	Station	Number of Responses	Avg. Busy Minutes per Response	Busy Hours	Responses per Day	Busy Hours per Day
M1822	Ambulance	62	3,446	28	1,626	9.4	4.5
M1821	Ambulance	61	2,748	37	1,695	7.5	4.6
M1824	Ambulance	64	2,578	32	1,387	7.1	3.8
M1825	Ambulance	65	2,562	29	1,251	7.0	3.4
E1811	Engine	61	2,512	23	964	6.9	2.6
M1823	Ambulance	63	2,362	35	1,386	6.5	3.8
E1812	Engine	62	2,275	22	844	6.2	2.3
BC181	Battalion Chief	BC	1,779	21	623	4.9	1.7
E1813	Engine	63	912	27	412	2.5	1.1
L1815	Ladder Truck	65	643	24	260	1.8	0.7
E1814	Engine	64	564	26	248	1.5	0.7
E1835	Engine	65	74	50	62	0.2	0.2
All Other	NA	NA	198	67	221	0.5	0.6

Note: Administrative and reserve units are included.

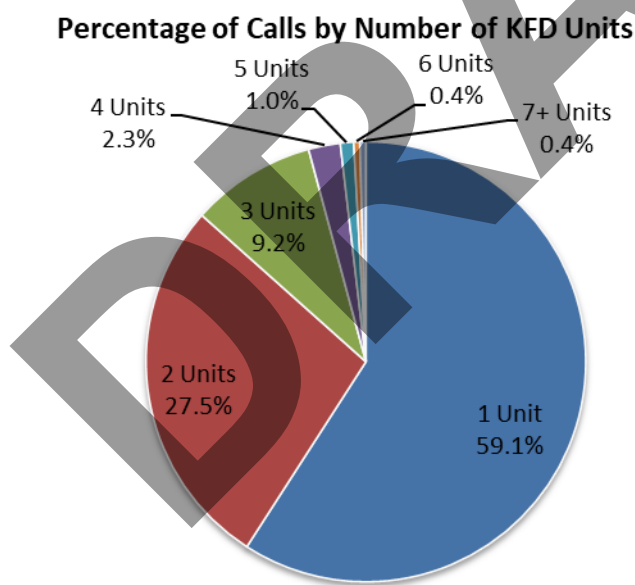
Overall, 59.1% calls were responded to by one KFD unit, 27.5% calls were responded to by two KFD units, 9.2% were responded to by three KFD units, and 4.2% calls were responded to by four or more KFD units.

Table 8: Number of Responding Units by Fire Call Type

Call Category	Number of KFD Units							Total
	1	2	3	4	5	6	7+	
EMS	5,317	2,717	942	268	116	33	6	9,399
Fire	135	58	61	18	11	17	46	346
Rescue	11	4	6	14	1	0	0	36
Hazardous Condition	54	37	15	0	1	5	1	113
Service	1,135	449	61	6	1	1	1	1,654
Good Intent	1,174	507	144	12	6	2	7	1,852
False Alarm and False Call	426	65	56	9	1	2	1	560
Other	13	4	2	0	0	2	0	21
Total	8,265	3,841	1,287	327	137	62	62	13,981
Percentage	59.1%	27.5%	9.2%	2.3%	1.0%	0.4%	0.4%	100.0%

Note: Administrative and reserve units are included.

Figure 5: Percentage of Calls by Number of Responding KFD Units



This analysis focused on the first arriving KFD units of all distinct incidents. The mean (average) turnout time was 78 seconds (0:01:18), travel time was 288 seconds (0:04:48), and turnout and travel time was 366 seconds (0:06:06). The average turnout and travel time is the same as the sum of the average turnout and travel time.

However, a more conservative and reliable measure of performance is the fractile or percentile. This measure is more robust, or less influenced by outliers, than measures of central tendency such as the mean. Best practice is to measure at the 90th percentile. In other words, 90% of all performance is captured expecting that 10% of the time the department may experience abnormal conditions that would typically be considered an outlier. For example, if the department were to report an average response time of six minutes, then in a normally distributed set of data, half of the responses would be longer than six minutes and half of the responses would be less than six minutes. The 90th percentile communicates that 9 out of 10 times the department performance is predictable and thus more clearly articulated to policy makers and the community.

The performance for turnout time at the 90th percentile was 146 seconds (0:02:26), travel time was 475 seconds (0:07:55), and turnout and travel time was 563 seconds (0:09:23). Please note that the summation of 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile turnout and travel time.

Table 9: Average Turnout and Travel Time of First Arriving Units by Program

Program	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
EMS	0:01:18	0:04:42	0:06:00	8,818
Fire	0:01:36	0:04:06	0:05:42	267
Rescue	0:01:30	0:05:36	0:07:06	32
Hazardous Condition	0:02:06	0:05:18	0:07:24	106
Service	0:01:06	0:05:18	0:06:24	1,470
Good Intent	0:01:12	0:04:36	0:05:48	798
False Alarm and False Call	0:01:54	0:04:36	0:06:36	534
Other	0:01:12	0:03:48	0:05:00	15
Total	0:01:18	0:04:48	0:06:06	12,040

Figure 6: Average Turnout and Travel Time by Call Category

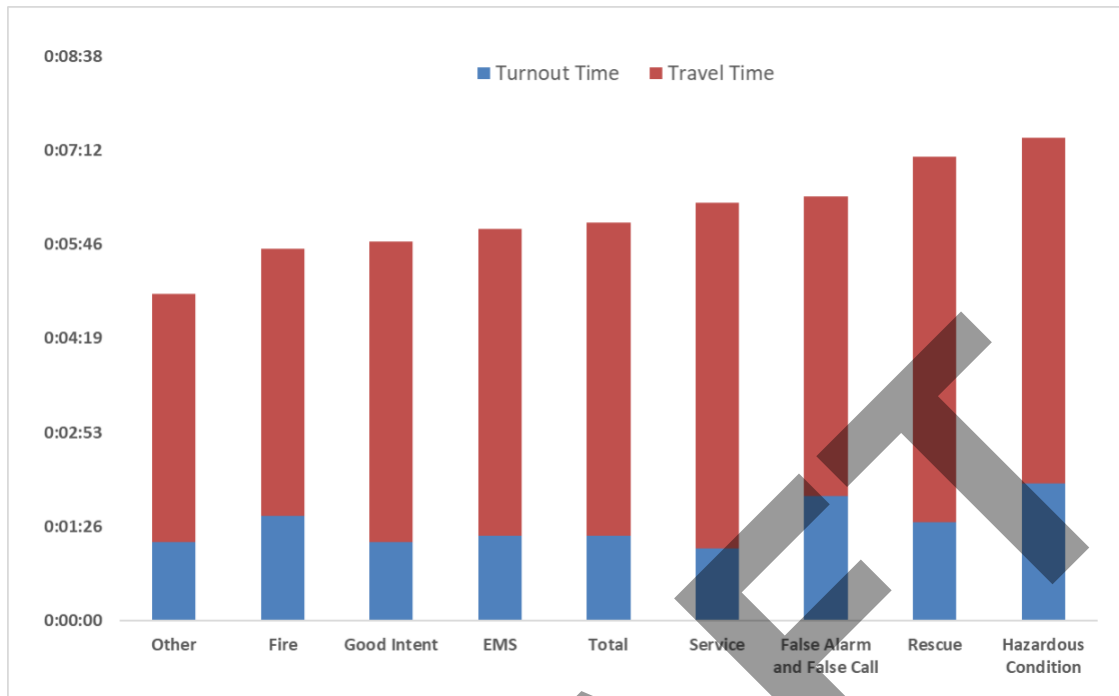


Table 10: 90th Percentile Turnout and Travel Time of First Arriving Units by Program

Program	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
EMS	0:02:19	0:07:45	0:09:07	8,818
Fire	0:02:53	0:06:39	0:08:42	267
Rescue	0:03:04	0:10:04	0:11:24	32
Hazardous Condition	0:03:26	0:08:17	0:10:46	106
Service	0:02:21	0:09:09	0:10:31	1,470
Good Intent	0:02:32	0:07:48	0:09:22	798
False Alarm and False Call	0:03:13	0:07:50	0:09:56	534
Other	0:02:00	0:06:39	0:07:23	15
Total	0:02:26	0:07:55	0:09:23	12,040

Note: The summation of 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile turnout and travel time.

The distributions of turnout and travel time were also analyzed. A total of 37% of calls had turnout time of one minute or less, and 80% of calls had turnout time of two minutes or less. A total of 63% calls had travel time of five minutes or less, and 90% of calls had travel time of eight minutes or less.

Figure 7: All Calls: Distribution of Turnout Time of First Arriving Unit

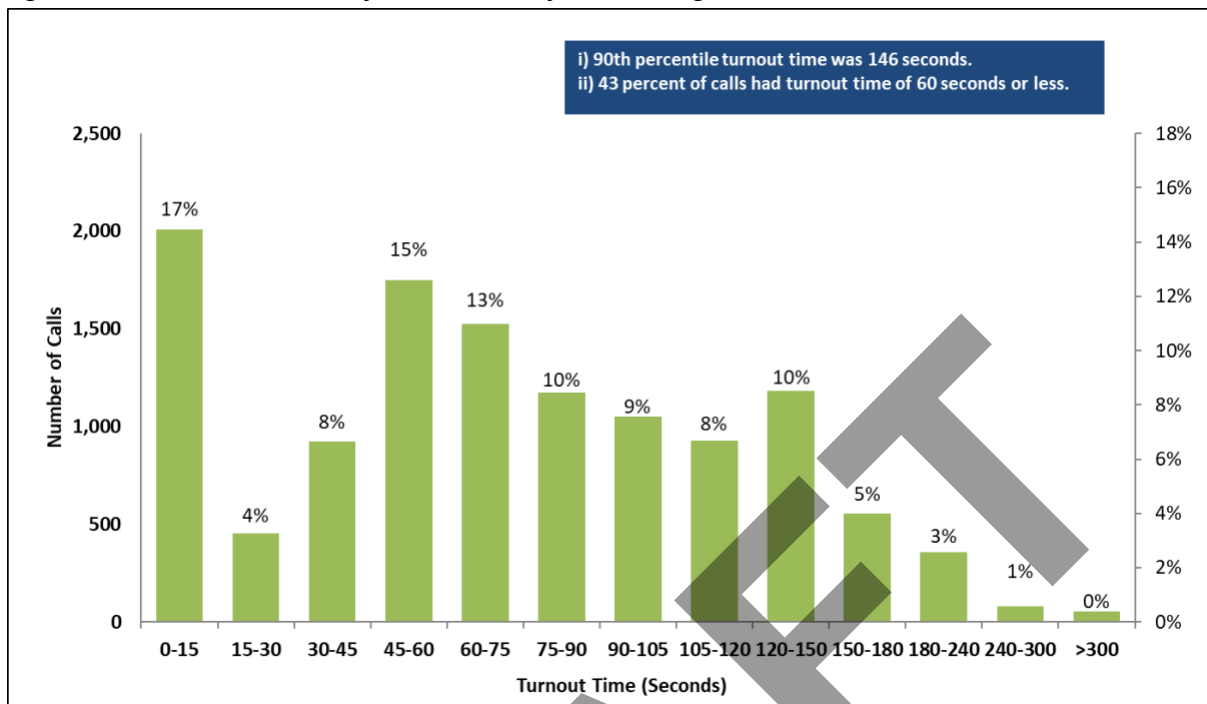
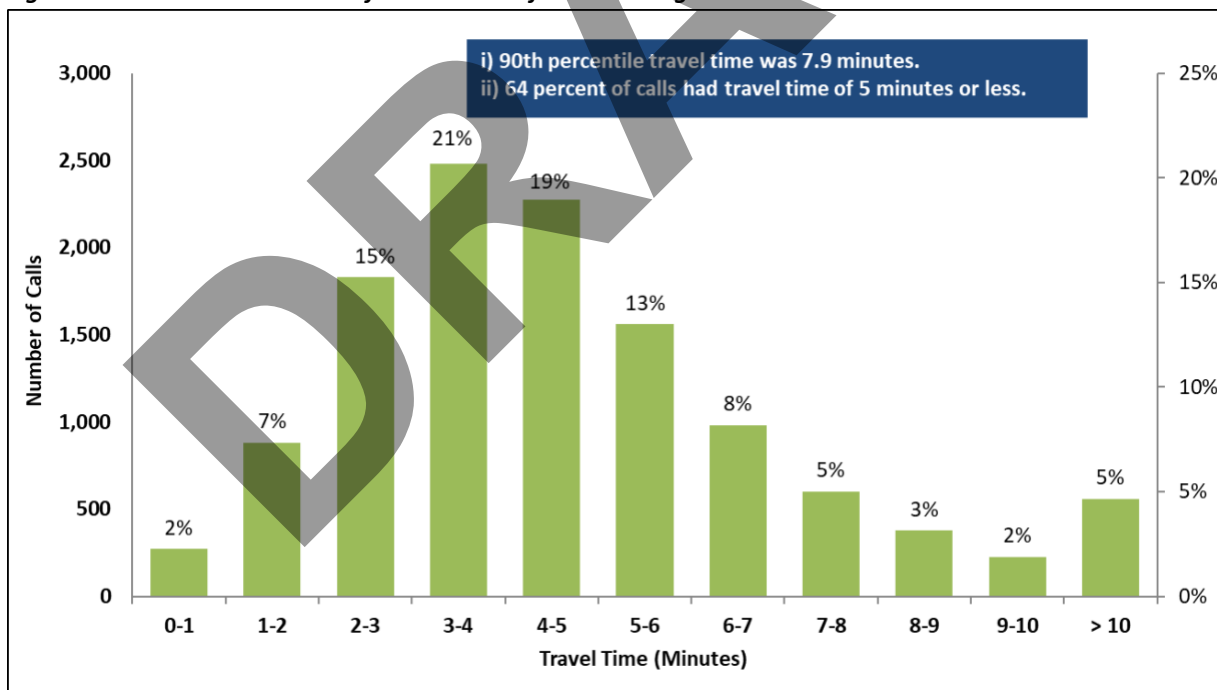


Figure 8: All Calls: Distribution of Travel Time of First Arriving Unit



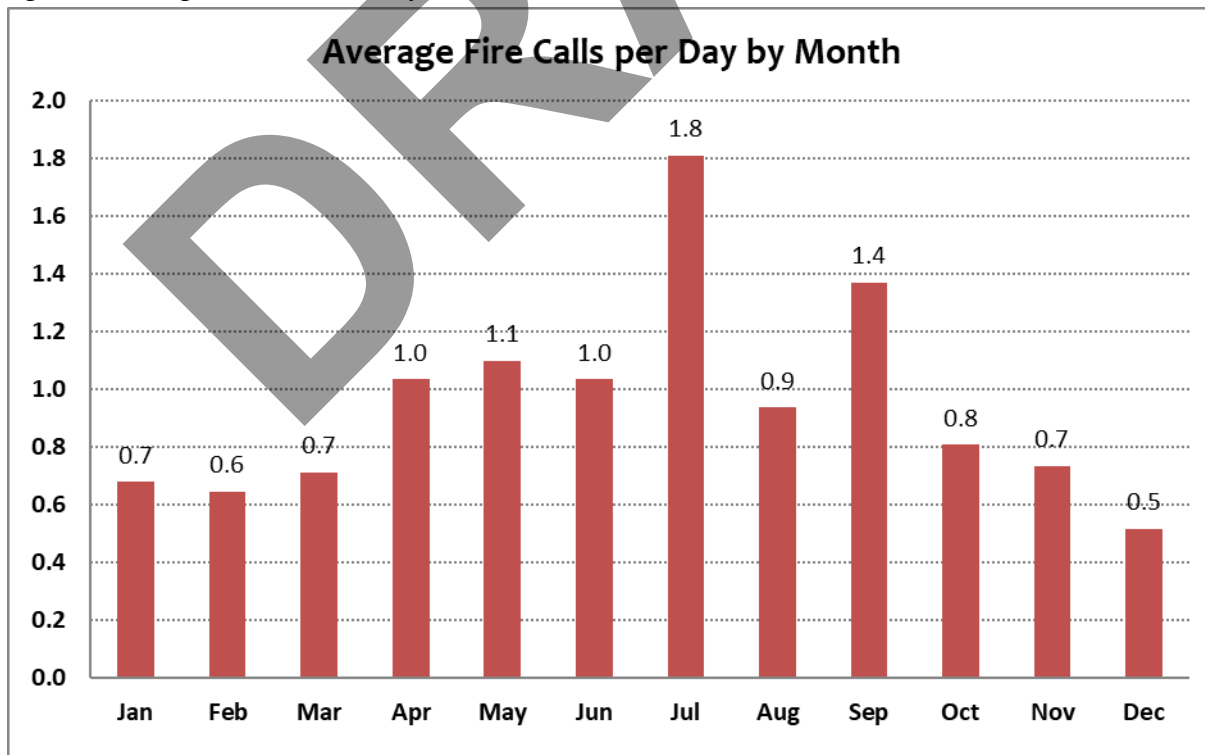
Fire Services

Temporal analyses were conducted to evaluate patterns in community demands for fire related services. These measures examined the frequency of requests for service in the 2022 calendar year by month, day of week, and hour of day. Results are presented below.

Table 11: Total Fire Related Calls per Month

Month	Number of Calls	Calls per Day	Call Percentage
Jan	21	0.68	6.1
Feb	18	0.64	5.2
Mar	22	0.71	6.4
Apr	31	1.03	9.0
May	34	1.10	9.8
Jun	31	1.03	9.0
Jul	56	1.81	16.2
Aug	29	0.94	8.4
Sep	41	1.37	11.8
Oct	25	0.81	7.2
Nov	22	0.73	6.4
Dec	16	0.52	4.6
Total	346	0.95	100.0

Figure 9: Average Fire Related Calls per Month

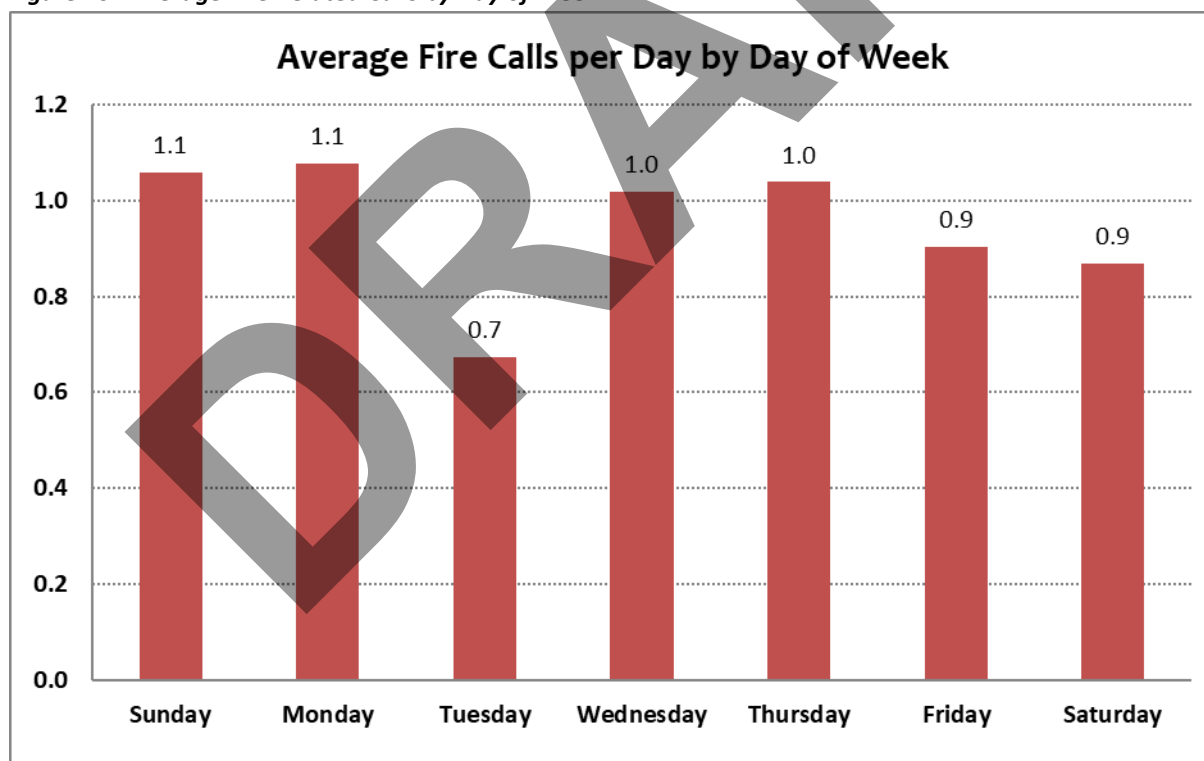


Similar analyses were conducted for fire related calls per day of week. The data revealed that there is variability in the demand for services by day of week. Weekend had higher demand than weekdays. Tuesday has the lowest frequency of requests for fire related services averaging 0.7 calls per day. Results for this analysis are presented below.

Table 12: Total Fire Related Calls by Day of Week

Day of Week	Number of Calls	Calls per Day	Call Percentage
Sunday	55	1.06	15.9
Monday	56	1.08	16.2
Tuesday	35	0.67	10.1
Wednesday	53	1.02	15.3
Thursday	54	1.04	15.6
Friday	47	0.90	13.6
Saturday	46	0.87	13.3
Total	346	0.95	100.0

Figure 10: Average Fire Related Calls by Day of Week

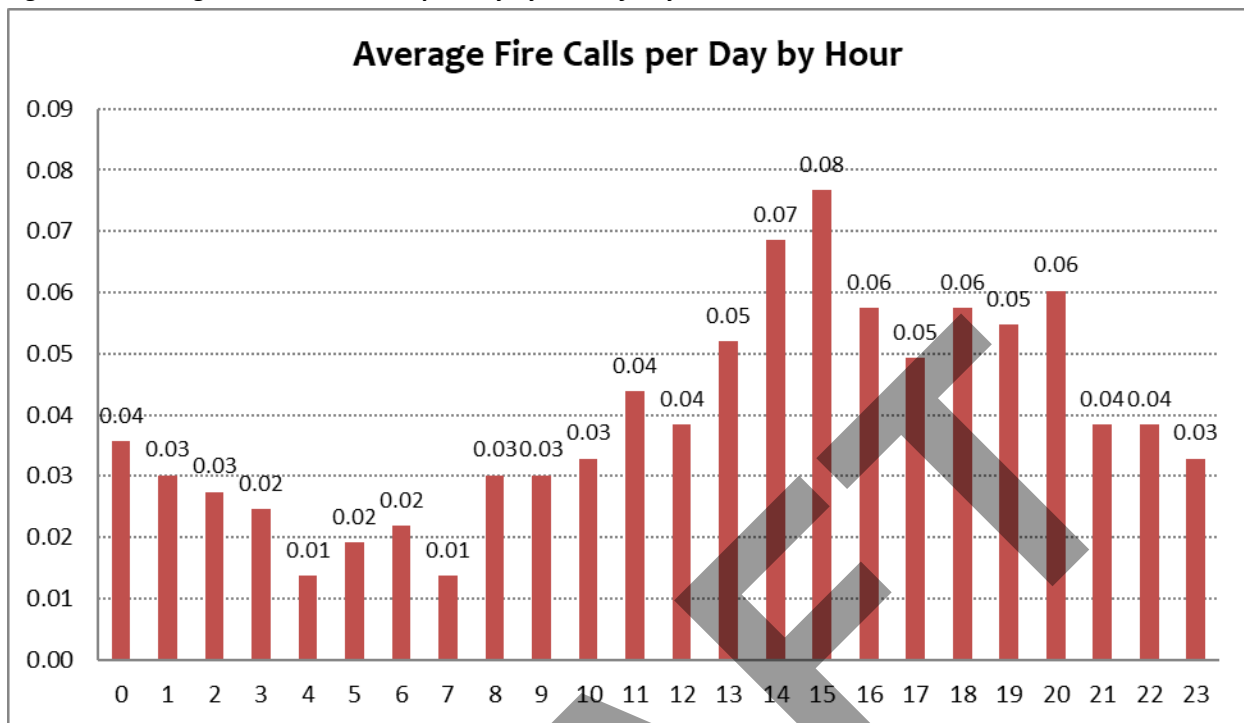


Fire related calls were evaluated by hour of the day. Considerable variability exists in the time of day that requests for fire related services are received. The hours that include midnight to 1000 have the lowest demands. While the middle of the day has the greatest frequency of calls, specifically the two hours from 1400 and 1500.

Table 13: Total and Average Fire Related Calls by Hour of Day

Hour of Day	Number of Calls	Calls per Day and per Hour	Call Percentage
0	13	0.04	3.8
1	11	0.03	3.2
2	10	0.03	2.9
3	9	0.02	2.6
4	5	0.01	1.4
5	7	0.02	2.0
6	8	0.02	2.3
7	5	0.01	1.4
8	11	0.03	3.2
9	11	0.03	3.2
10	12	0.03	3.5
11	16	0.04	4.6
12	14	0.04	4.0
13	19	0.05	5.5
14	25	0.07	7.2
15	28	0.08	8.1
16	21	0.06	6.1
17	18	0.05	5.2
18	21	0.06	6.1
19	20	0.05	5.8
20	22	0.06	6.4
21	14	0.04	4.0
22	14	0.04	4.0
23	12	0.03	3.5
Total	346	0.95	100.0

Figure 11: Average Fire Related Calls per Day by Hour of Day



KFD made a total of 739 unit responses to fire related calls, averaging 2.0 unit responses per day. Battalion BC181 made the most fire responses.

Table 14: Workload by Unit for Fire Calls in the Descending Order

Unit ID	Unit Description	Station	Number of Responses	Avg. Busy Minutes per Response	Busy Hours	Responses per Day	Busy Hours per Day
BC181	Battalion Chief	BC	173	61	175	0.2	0.5
E1811	Engine	61-E	160	65	174	0.2	0.5
E1812	Engine	62-E	156	70	182	0.2	0.5
E1814	Engine	64	105	68	118	0.2	0.3
E1813	Engine	63	104	75	130	0.2	0.4
L1815	Ladder Truck	65	104	73	126	0.2	0.3
M1821	Ambulance	61-A	58	85	82	0.2	0.2
E1835	Engine	65	48	69	55	0.2	0.2
M1822	Ambulance	62-A	46	68	52	0.2	0.1
E1816	Engine	61-E	12	213	43	0.6	0.1
M1823	Ambulance	63	11	108	20	0.3	0.1
MO181	Medical Officer	FTC	11	137	25	0.4	0.1
CH181	Chief	ADM	10	181	30	0.5	0.1
TO181	Training Officer	FTC	7	163	19	0.4	0.1
FM181	Deputy Fire Marshal	ADM	6	60	6	0.2	0.0
M1824	Ambulance	64	4	77	5	0.2	0.0
CH183	Chief	ADM	3	39	2	0.1	0.0
M1825	Ambulance	65	3	51	3	0.1	0.0
IP183	Fire Inspector	ADM	3	302	15	0.8	0.0
CH182	Chief	ADM	2	150	5	0.4	0.0
E1817	Engine	63	1	659	11	1.8	0.0
TR181	Training Officer	FTC	1	41	1	0.1	0.0
BC182	Battalion Chief	BC	1	2	0	0.0	0.0
FM182	Deputy Fire Marshal	ADM	1	6	0	0.0	0.0
IP182	Fire Inspector	ADM	1	0	0	0.0	0.0

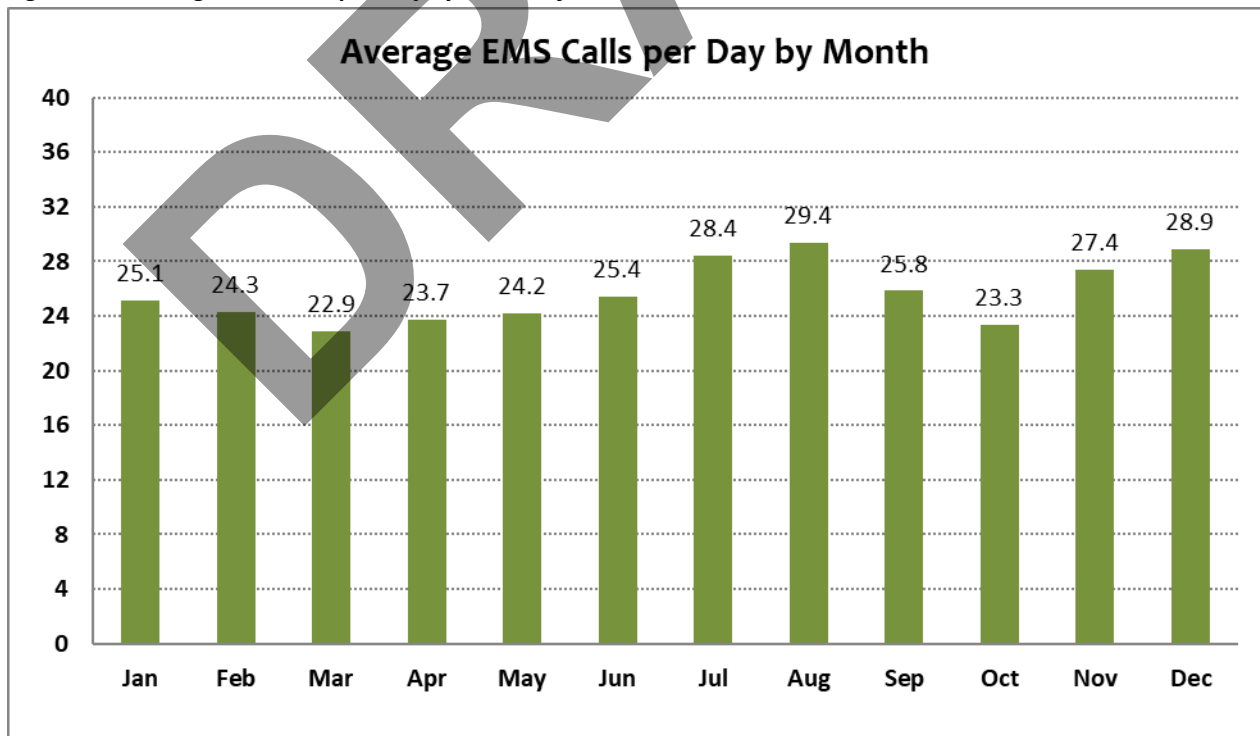
Emergency Medical Services

KFD provide emergency Medical Services (EMS) and transport services. Temporal analyses were completed to describe the community's demands for emergency medical services. These analyses were completed by month of year, day of week, and hour of day.

Table 15: Annual Total and Average per Day of EMS Calls by Month of Year

Month	Number of Calls	Calls per Day	Call Percentage
Jan	779	25.1	8.3
Feb	681	24.3	7.2
Mar	709	22.9	7.5
Apr	711	23.7	7.6
May	750	24.2	8.0
Jun	762	25.4	8.1
Jul	881	28.4	9.4
Aug	911	29.4	9.7
Sep	775	25.8	8.2
Oct	723	23.3	7.7
Nov	822	27.4	8.7
Dec	896	28.9	9.5
Total	9,400	25.8	100.0

Figure 12: Average EMS Calls per Day by Month of Year

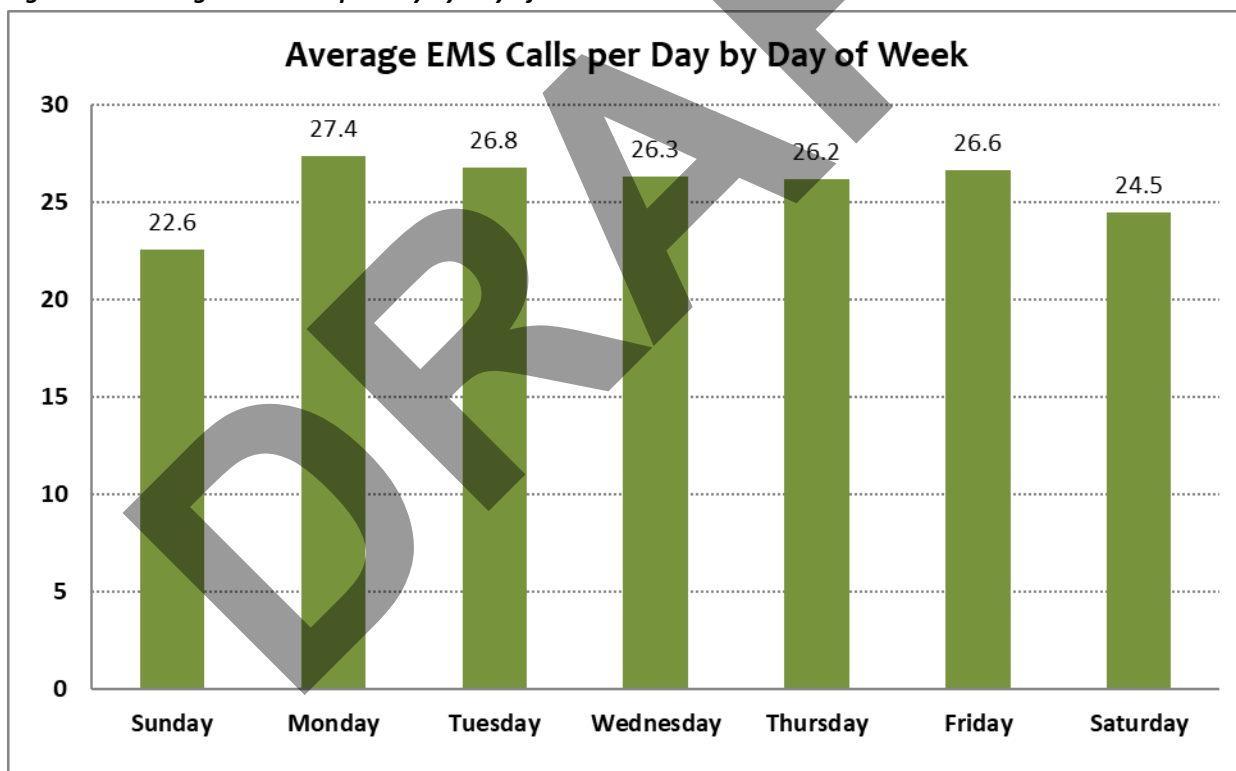


Similar analyses were conducted examining the frequency of requests for service by the day of the week. There is only minor variability in the demand for services by the day of the week. Monday receives the most requests for service and Sunday received the least. Results are provided below.

Table 16: Annual Total and Average per Day of EMS Calls by Day of Week

Day of Week	Number of Calls	Calls per Day	Call Percentage
Sunday	1,174	22.6	12.5
Monday	1,423	27.4	15.1
Tuesday	1,392	26.8	14.8
Wednesday	1,369	26.3	14.6
Thursday	1,361	26.2	14.5
Friday	1,384	26.6	14.7
Saturday	1,297	24.5	13.8
Total	9,400	25.8	100.0

Figure 13: Average EMS Calls per Day by Day of Week

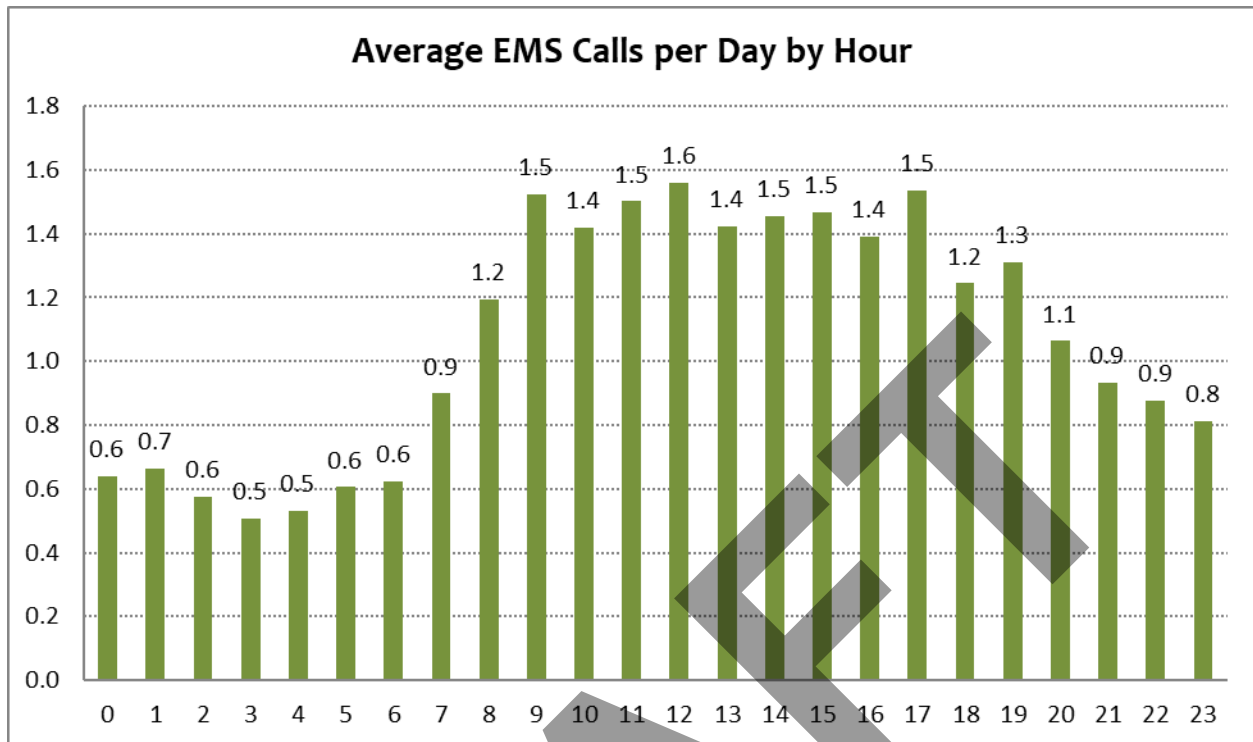


Finally, the analyses for EMS services are concluded by identifying the EMS calls by hour of day and the average hourly rate of EMS calls per hour. The demand curve for requests for EMS service follows an expected pattern experienced in similar communities across the nation. The higher frequency of service calls begins from 0900 to 1700 and each hour had more than 500 calls. The demand peaked at noon with 569 calls in a year. Results are provided below.

Table 17: Annual Total and Average per Day of EMS Calls by Hour of Day

Hour of Day	Number of Calls	Calls per Day and per Hour	Call Percentage
0	234	0.6	2.5
1	242	0.7	2.6
2	210	0.6	2.2
3	185	0.5	2.0
4	194	0.5	2.1
5	221	0.6	2.4
6	228	0.6	2.4
7	328	0.9	3.5
8	436	1.2	4.6
9	556	1.5	5.9
10	518	1.4	5.5
11	548	1.5	5.8
12	569	1.6	6.1
13	519	1.4	5.5
14	531	1.5	5.6
15	535	1.5	5.7
16	508	1.4	5.4
17	561	1.5	6.0
18	454	1.2	4.8
19	478	1.3	5.1
20	388	1.1	4.1
21	340	0.9	3.6
22	320	0.9	3.4
23	297	0.8	3.2
Total	9,400	25.8	100.0

Figure 14: Average EMS Calls per Day by Hour of Day



KFD units made a total of 15,469 responses to EMS calls. The total time on task was 8,350 hours, and the average time on task was 32 minutes. All five ambulances had more than 1,000 unit responses to EMS calls, and the top three units were: M1822, M1821, and M1825.

Table 18: Workload by Unit for EMS Calls in the Descending Order

Unit ID	Unit Description	Station	Number of Responses	Avg. Busy Minutes per Response	Busy Hours	Responses per Day	Busy Hours per Day
M1822	Ambulance	62-A	2,634	33	1,466	0.1	4.0
M1821	Ambulance	61-A	2,212	42	1,541	0.1	4.2
M1825	Ambulance	65	2,091	33	1,154	0.1	3.2
M1824	Ambulance	64	2,067	37	1,260	0.1	3.5
M1823	Ambulance	63	1,902	40	1,282	0.1	3.5
E1811	Engine	61-E	1,553	23	597	0.1	1.6
E1812	Engine	62-E	1,288	22	473	0.1	1.3
BC181	Battalion Chief	BC	927	19	293	0.1	0.8
E1813	Engine	63	382	25	158	0.1	0.4
L1815	Ladder Truck	65	188	16	49	0.0	0.1
E1814	Engine	64	140	18	41	0.0	0.1
MO181	Medical Officer	FTC	38	35	22	0.1	0.1
E1816	Engine	61-E	11	15	3	0.0	0.0
BC184	Battalion Chief	BC	10	19	3	0.1	0.0
BC182	Battalion Chief	BC	6	13	1	0.0	0.0
E1817	Engine	63	5	14	1	0.0	0.0
M1826	Ambulance	62-A	5	24	2	0.1	0.0
E1835	Engine	65	4	25	2	0.1	0.0
BT181	Bike Team	BT	3	50	3	0.1	0.0
CH181	Chief	ADM	2	7	0	0.0	0.0
FM181	Deputy Fire Marshal	ADM	1	14	0	0.0	0.0

Transport

We analyzed outcomes for the requests for EMS services. The number of EMS transports totaled 5,623, averaging 15.4 transports per day. Approximately 60% of EMS calls have patients being transported to hospitals. Duration of a call is defined as the difference between the first unit dispatch time and the last unit clear time. On average, the duration of a non-transport EMS call was 24.5 minutes. The duration of a transport call is 2.2 times longer than a non-transport call, averaging 54 minutes per call.

Table 19: EMS Transports by Call Category

Medical Level	Transport		Non-Transport		Transport Rate
	Duration	Number of Calls	Duration	Number of Calls	
Med 1	0:53:02	359	0:25:49	184	66.1%
Med 2	0:53:46	3,478	0:25:55	1,433	70.8%
Med 3	0:52:10	1,464	0:26:24	400	78.5%
Med 4	1:05:31	124	0:52:10	124	50.0%
MVA	0:54:01	155	0:24:50	93	62.5%
MVAE	1:09:15	16	0:41:43	5	76.2%
Other	1:04:48	27	0:20:17	1,538	1.7%
EMS Total	0:53:40	5,623	0:24:31	3,777	59.8%

The number one transport destination was Trios Southridge Hospital, accounting for 77.4% of the total, and the average duration was 51.9 minutes. The second highest transport destination was Kadlec Regional Medical Center, which accounted for 15.5% of the total, with an average duration of 65.4 minutes.

Table 20: EMS Transports by Destination

Hospital	Duration	Number of EMS Calls	Transports per Day	% of Total
(TSH) Trios Southridge Hospital	0:51:54	4,355	11.9	77.4%
(KRM) Kadlec Regional Medical Center	1:05:24	872	2.4	15.5%
(KERK) Kadlec Free Standing ER	0:47:00	324	0.9	5.8%
(LMC) Lourdes Medical Center	1:02:54	27	0.1	0.5%
Other	0:41:18	45	0.1	0.8%
Total	0:53:42	5,623	15.4	100%

We analyzed variation of total EMS requests and transport requests by the hour of the day and the average hourly rate of requests. The variation of total EMS requests and EMS transport reports followed a similar pattern. The busiest period for EMS and EMS transport requests was between 0900 and 1700. Requests by hour of the day are represented below.

Figure 15: Average EMS Calls and EMS Transports per Day and by Hour of Day

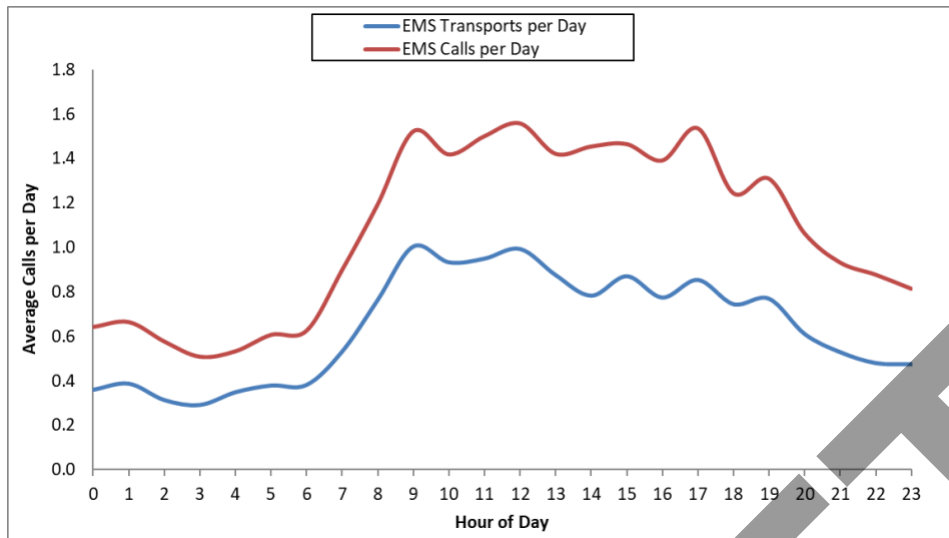


Table 21: Total EMS Calls and EMS Transports and Average per Day by Hour of Day

Hour	Number of EMS Transports	Number of EMS Calls	EMS Transports per Day and per Hour	EMS Calls per Day and per Hour	Transport Rate
0	131	234	0.4	0.6	56.0
1	141	242	0.4	0.7	58.3
2	114	210	0.3	0.6	54.3
3	106	185	0.3	0.5	57.3
4	127	194	0.3	0.5	65.5
5	138	221	0.4	0.6	62.4
6	139	228	0.4	0.6	61.0
7	194	328	0.5	0.9	59.1
8	279	436	0.8	1.2	64.0
9	367	556	1.0	1.5	66.0
10	341	518	0.9	1.4	65.8
11	347	548	1.0	1.5	63.3
12	363	569	1.0	1.6	63.8
13	320	519	0.9	1.4	61.7
14	286	531	0.8	1.5	53.9
15	318	535	0.9	1.5	59.4
16	283	508	0.8	1.4	55.7
17	312	561	0.9	1.5	55.6
18	272	454	0.7	1.2	59.9
19	281	478	0.8	1.3	58.8
20	223	388	0.6	1.1	57.5
21	193	340	0.5	0.9	56.8
22	175	320	0.5	0.9	54.7
23	173	297	0.5	0.8	58.2

Comparison of Workloads by Demand Zone

Another method of assessing the effectiveness of the distribution model is to analyze the demand for services across the distribution model. Workload is assessed at the station demand zone level and at the individual unit level. Analyses illustrate that response areas Station 62 and 61 were the top demand areas.

Figure 16: Department Workload by Station Demand Zone

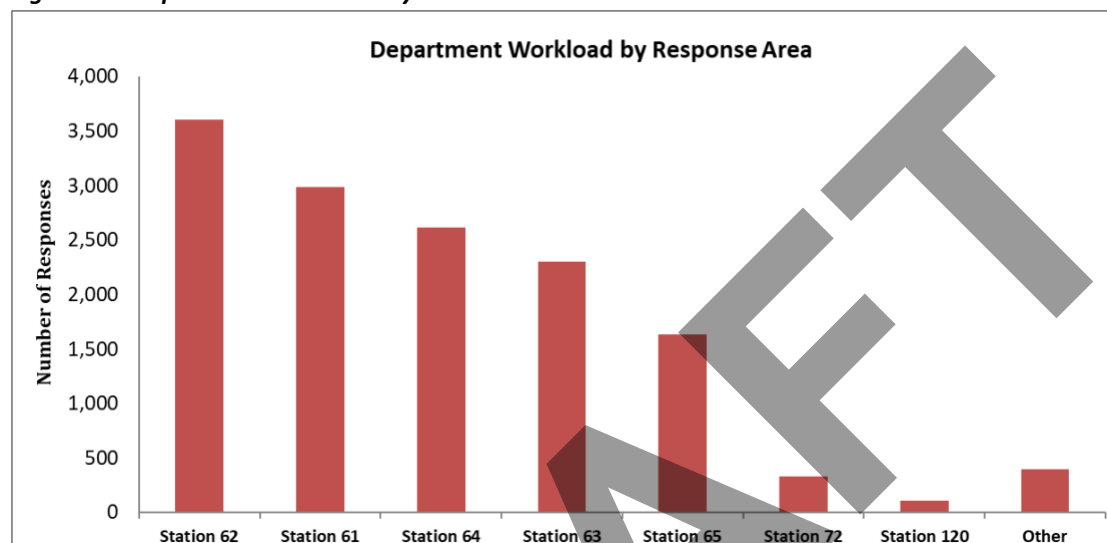


Table 22: Number of Responses by Response Area and Program

Response Area	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm and False Call	Other	Total	Responses per Day
Station 62	2,394	88	6	27	454	492	137	9	3,607	9.9
Station 61	2,073	69	3	33	361	359	90	1	2,989	8.2
Station 64	1,826	60	8	18	381	212	107	5	2,617	7.2
Station 63	1,608	36	14	18	228	250	142	2	2,298	6.3
Station 65	1,123	25	4	14	199	185	79	1	1,630	4.5
Station 72	183	10	0	1	28	104	4	2	332	0.9
Station 120	63	13	0	0	1	31	0	1	109	0.3
Other	129	45	1	2	2	219	1	0	399	1.1

Note: Administrative and reserve units are included.

Another measure, time on task, is necessary to evaluate best practices in efficient system delivery and consider the impact workload has on personnel. Unit Hour Utilization (UHU) determinants were developed by mathematical model. This model includes both the proportion of calls handled in each major service area (Fire, EMS, Rescue, and Hazmat) and total unit time on task for these service categories in 2015. The resulting UHU's represent the percentage of the work period (24 hours) that is utilized responding to requests for service. Historically, the International Association of Fire

Fighters (IAFF) has recommended that 24-hour units utilize 0.30, or 30% workload as an upper threshold.¹ In other words this recommendation would have personnel spend no more than eight (8) hours per day on emergency incidents. These thresholds take into consideration the necessity to accomplish non-emergency activities such as training, health and wellness, public education, and fire inspections. The 4th edition of the IAFF EMS Guidebook no longer specifically identifies an upper threshold. However, *FITCH* recommends that an upper unit utilization threshold of approximately .30, or 30%, would be considered best practice. In other words, units and personnel should not exceed 30%, or eight (8) hours, of their workday responding to calls. These recommendations are also validated in the literature. For example, in their review of the City of Rolling Meadows, the Illinois Fire Chiefs Association utilized a UHU threshold of .30 as an indication to add additional resources.² Similarly, in a standards of cover study facilitated by the Center for Public Safety Excellence, the Castle Rock Fire and Rescue Department utilizes a UHU of .30 as the upper limit in their standards of cover due to the necessity to accomplish other non-emergency activities.³

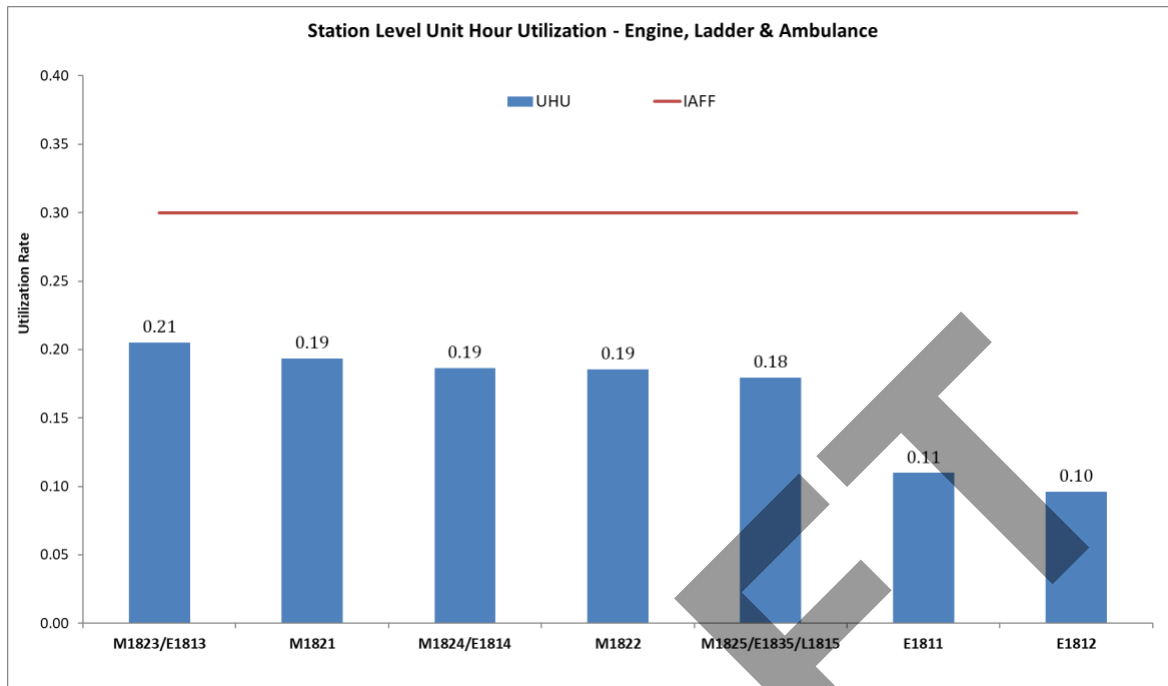
Of all KFD stations, we only looked at engine, truck and ambulance units. At any given time, the department staffs 7 units 24/7. We calculated the unit utilization at the department level. This will provide a capacity normalized measurement to understand the overall workload. Since the department has a total of 7 staffed units (engine/truck/ambulance), the total available hours in a year is 61,320 (7*365*24). The total busy hours for engine/truck/ambulance units in 2022 were 10,138, so KFD's utilization of all engines, truck and ambulance units is 16.5%. M1821 and M1822 were utilized the most with the UHU at 19%. E1811 was the most utilized fire suppression vehicle at 11%.

¹ International Association of Firefighters. (1995). *Emergency Medical Services: A Guidebook for Fire-Based Systems*. Washington, DC: Author. (p. 11)

² Illinois Fire Chiefs Association. (2012). *An Assessment of Deployment and Station Location: Rolling Meadows Fire Department*. Rolling Meadows, Illinois: Author. (pp. 54-55)

³ Castle Rock Fire and Rescue Department. (2011). *Community Risk Analysis and Standards of Cover*. Castle Rock, Colorado: Author. (p. 58)

Figure 17: Engine, Ladder and Ambulance: Unit Hour Utilization



Note: Reserve engines E1816 and E1817 are excluded.

Table 23: Engine: Unit Hour Utilization

Unit	Unit Description	Station	Busy Hours	UHU	IAFF
M1821	Ambulance	61-A	1,695	0.19	0.30
M1822	Ambulance	62-A	1,626	0.19	0.30
M1824/E1814	Ambulance/Engine	64	1,635	0.19	0.30
M1823/E1813	Ambulance/Engine	63	1,798	0.21	0.30
M1825/E1835/L1815	Ambulance/Engine/Ladder	65	1,574	0.18	0.30
E1811	Engine	61-E	964	0.11	0.30
E1812	Engine	62-E	844	0.10	0.30

First Arriving Unit Response Time by Response Area

Further analyses were conducted to measure the performance of the first arriving unit in each demand zone or response area.

Examination of the overall performance at the 90th percentile reveals that Station 62 had the quickest turnout and travel times followed by Station 61, Station 63, Station 65, and Station 64 in order of performance.

Table 24: Mean First Arrival Performance by First Due Station

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 61	0:01:24	0:04:30	0:05:54	2,736
Station 62	0:01:06	0:04:24	0:05:36	3,297
Station 63	0:01:18	0:05:00	0:06:24	2,090
Station 64	0:01:18	0:05:12	0:06:30	2,454
Station 65	0:01:24	0:05:00	0:06:24	1,463
Total	0:01:18	0:04:48	0:06:06	12,040

Table 25: 90th Percentile First Arrival Performance by First Due Station

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 61	0:02:34	0:07:39	0:09:06	2,736
Station 62	0:02:19	0:07:10	0:08:35	3,297
Station 63	0:02:30	0:08:12	0:09:44	2,090
Station 64	0:02:25	0:08:41	0:10:07	2,454
Station 65	0:02:21	0:08:16	0:09:42	1,463
Total	0:02:26	0:07:55	0:09:23	12,040

Figure 18: 90th Percentile Turnout Time by First Due Station

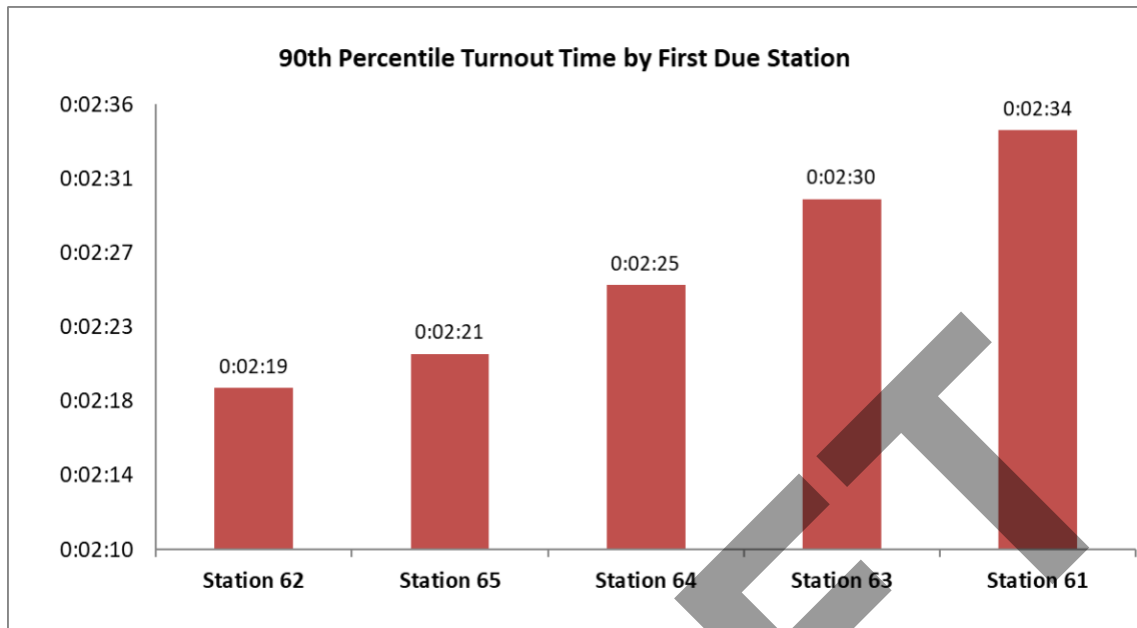


Figure 19: 90th Percentile Travel Time Performance by First Due Station

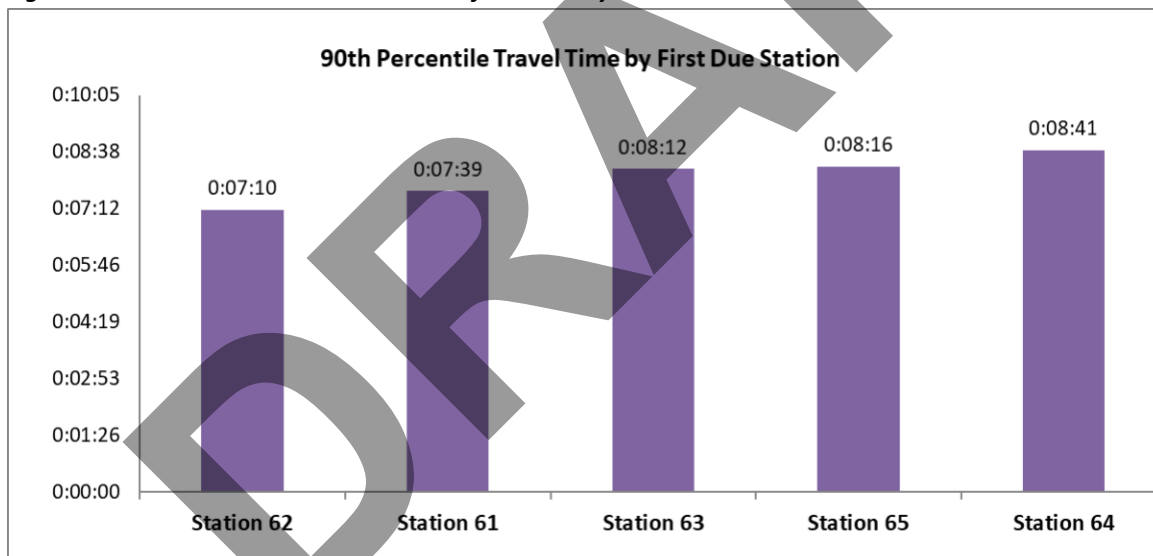
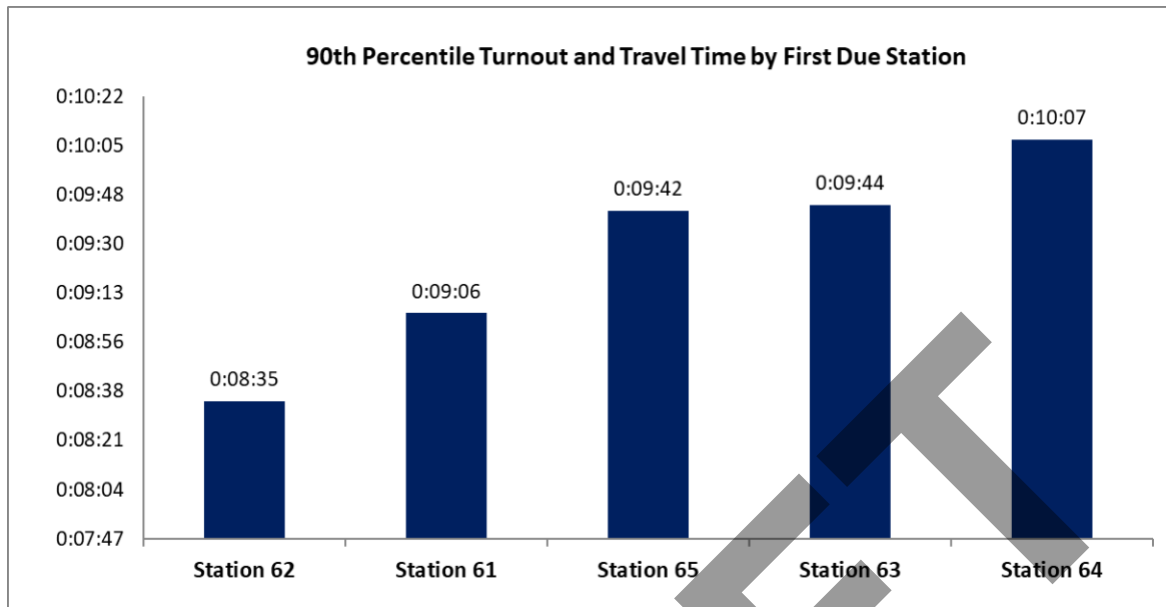


Figure 20: 90th Percentile Response Time Performance by First Due Station



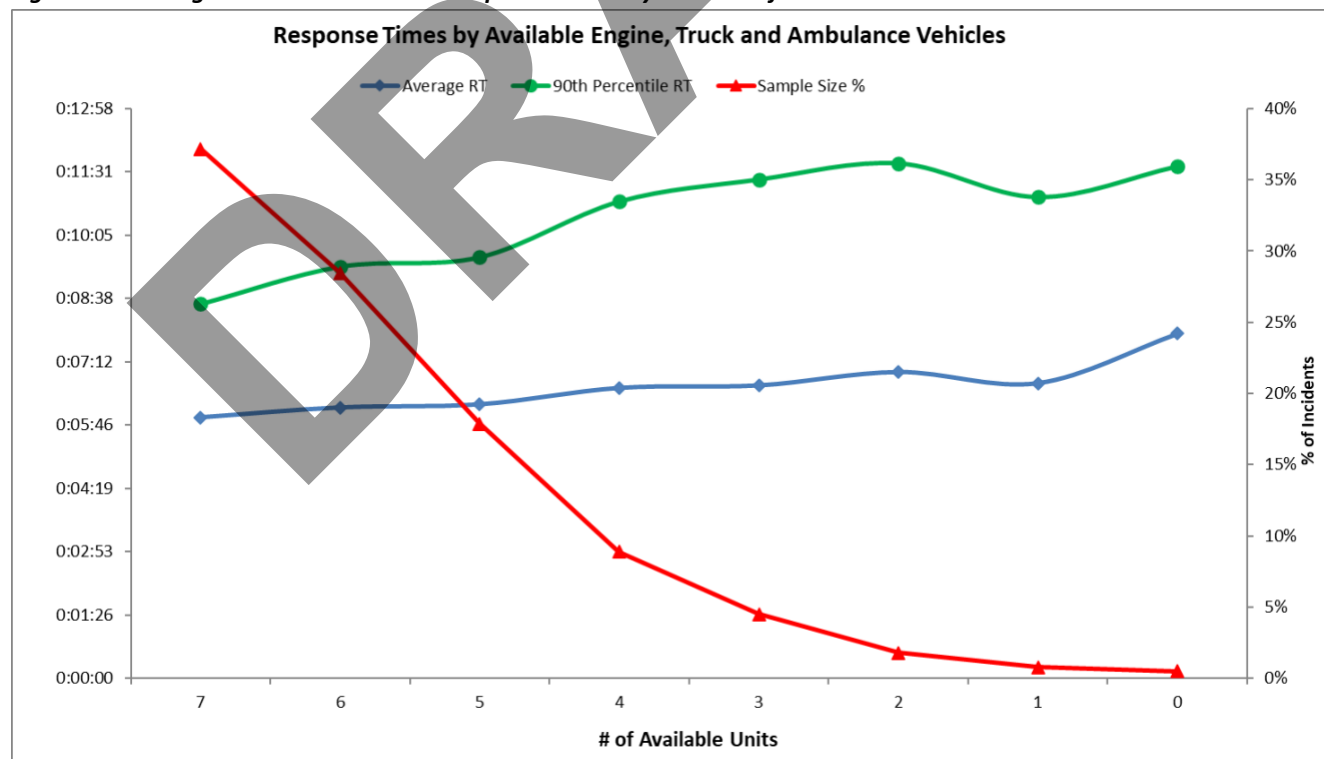
Response Time performance by Available Vehicles

We also investigated whether the response time performance deteriorated when there were fewer vehicles available. In this analysis, we only included engines, a ladder truck, and ambulances. KFD staffed 7 units 24/7. KFD had 6 or 7 units available to respond to 66% of the calls. In 0.5% of the calls, all seven units were dispatched and tied to other calls. In these 0.5% of calls, the 90th percentile time exceeded 11 minutes, driven by the longer travel time.

Table 26: Average and 90th Percentile Response Time by Number of Available Units

Number of Available Units	Average			90th Percentile			Sample Size	% of Calls
	Turnout Time	Travel Time	Turnout and Travel Time	Turnout Time	Travel Time	Turnout and Travel Time		
7	0:01:31	0:04:26	0:05:56	0:02:37	0:06:52	0:08:31	4,433	37.2%
6	0:01:21	0:04:49	0:06:10	0:02:26	0:07:46	0:09:22	3,397	28.5%
5	0:01:12	0:05:02	0:06:14	0:02:20	0:08:14	0:09:35	2,132	17.9%
4	0:01:09	0:05:27	0:06:36	0:02:21	0:09:12	0:10:51	1,061	8.9%
3	0:01:04	0:05:36	0:06:40	0:02:16	0:09:59	0:11:21	537	4.5%
2	0:00:51	0:06:07	0:06:58	0:01:49	0:10:45	0:11:43	215	1.8%
1	0:00:51	0:05:52	0:06:43	0:02:06	0:09:42	0:10:57	95	0.8%
0	0:00:41	0:07:10	0:07:50	0:02:10	0:10:55	0:11:39	61	0.5%

Figure 21: Average and 90th Percentile Response Times by Number of Available Vehicles



Overlapped or Simultaneous Call Analysis

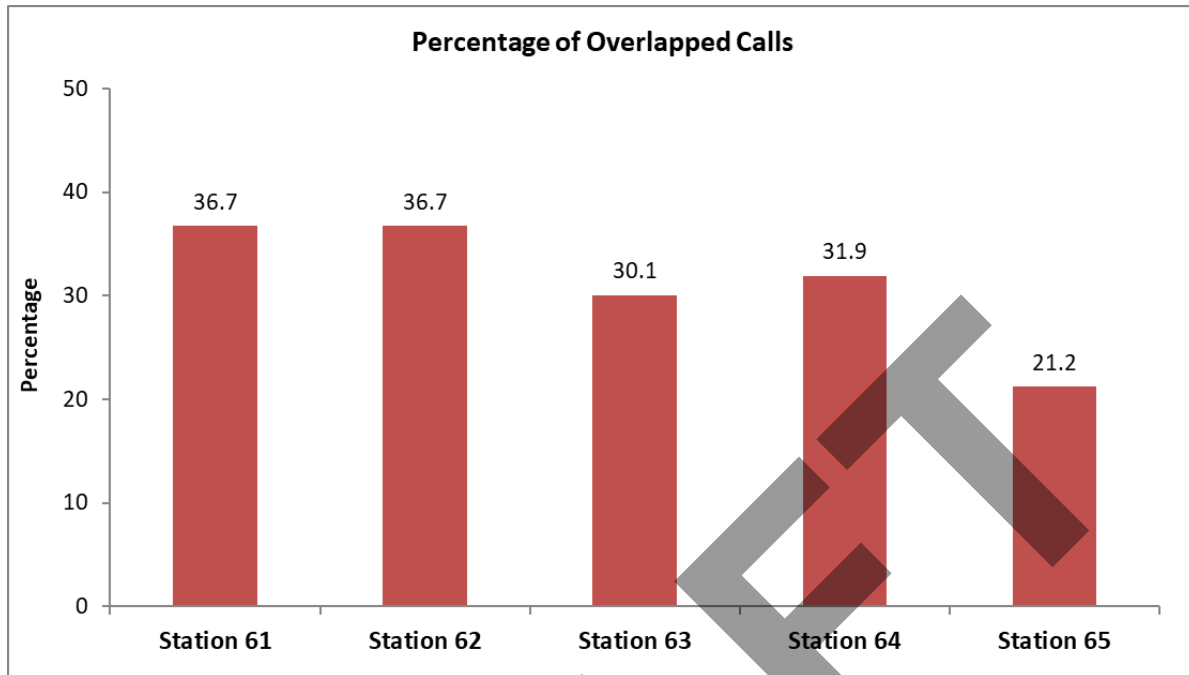
Overlapped calls are defined as the rate at which another call was received for the same response area while there were one or more ongoing calls in the same first due station. For example, if there is one call in Station 61's zone, before the call was cleared another request in Station 61's zone occurred, and those two calls would be captured as overlapped calls. Some studies also refer as simultaneous calls. Understanding the frequency of overlapped or simultaneous calls occurring will help to determine the number of units to staff for each station. In general, the larger the call volume a first due station has, it is more likely to have overlapped or simultaneous calls. The distribution of the demand throughout the day will impact the chance of having overlapped or simultaneous calls. The duration of a call will also have major influences, since the longer time it takes to clear a request, the more likely to have an overlapped request.

Below are the actual percentages of overlapped calls in 2022. Station 61 and 62's response areas had the highest percentage of overlapped calls at 36.7% since it has the second the greatest number of calls of all response areas, followed by Station 64 at 31.9%, Station 63 at 30.1%, and Station 65 at 21.2%.

Table 27: Overlapped Calls by Response Area

Response Area	Overlapped Calls	Total Calls	Percentage of Overlapped Calls
Station 61	1,097	2,989	36.7
Station 62	1,325	3,607	36.7
Station 63	691	2,299	30.1
Station 64	835	2,617	31.9
Station 65	346	1,630	21.2

Figure 22: Percentage of Overlapped Calls by Response Area



DRAFT



August 2023

Draft Data Analysis



Kennewick-Richland-Pasco, Washington

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CONSULTANT REPORT

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EXECUTIVE SUMMARY

From January 1, 2019, to December 31, 2022, we combined the data from the three agencies. In the first four tables, we provided four-year stats from 2019 to 2022. We focused our analysis on data from 2022 in the remainder of this report. Over the past four years, the number of calls has grown at a CAGR of 11.3%, and the number of unit responses has grown at a CAGR of 10.8%.

A total of 32,208 requests were recorded in 2022, averaging 88.2 calls per day. Of those, 68% or 60.0 per day were EMS requests. From dispatch to clear, all units from the three agencies (KFD, RFD and PFD) spent a total of 24,486 hours, averaging 67.1-unit hours per day. For 44% of calls, the three agencies responded to 2 or more units. On average, 1.6 units responded to each call. For EMS calls, 60% resulted in transporting patients. The duration for EMS transport calls averaged 49 minutes, which is 2.1 times longer than a non-transport EMS call (23 minutes). The number one transport destination was Kadlec Regional Medical Center, accounting for 46% of the total, and the average duration was 49.2 minutes. The second highest transport destination was Trios Southridge Hospital, which accounted for 34% of the total, with an average duration of 52.3 minutes.

Of the three agencies, Ambulance units contributed 61% of total unit responses, averaging 88.5-unit responses per day. Engine and ladder units contributed 30% of total unit response and averaged 43.3 per day.

Looking at response time performance of the first arriving units from the three agencies, the mean (average) turnout time was 72 seconds, travel time was 282 seconds (four minutes 42 seconds), and turnout and travel time was 354 seconds (five minutes and 54 seconds). The average turnout and travel time is the same as the sum of the average turnout and travel time. The performance for turnout time at the 90th percentile was 130 seconds (two minutes and 10 seconds), travel time was 466 seconds (seven minutes 46 seconds), and turnout and travel time was 545 seconds (nine minutes, 5 seconds). Please note that the summation of 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile turnout and travel time.

COMMUNITY RESPONSE HISTORY

The total number of calls is 23,353 in 2019 and 32,208 in 2022. In the past 4 years, the demand has been growing at a CAGR (compound annual growth rate) of 11.3%. In 2022, the number of calls averaged 88.2 per day, and EMS calls averaged 60.0 per day or 67.9% of the total calls.

The number of individual unit responses will be more reflective of total workload since on average 1.6 units from the three agencies (KFD, RFD and PFD) responded to an incident in 2022. The total number of unit responses grows at a CAGR of 10.8%. As summarized in Table 4, all units from the three agencies combined made 52,837 responses in 2022 and were busy on calls 24,486 hours. On average, each response lasted 27.8 minutes from dispatched to clear.

Table 1: 2019 – 2022: Number of Incidents by Call Category

Program	Number of Calls			
	2019	2020	2021	2022
EMS	16,910	16,960	19,742	21,883
Fire	688	738	864	847
Rescue	68	60	69	90
Hazardous Condition	272	243	300	325
Service	1,740	2,299	2,748	3,628
Good Intent	2,315	2,386	2,996	3,938
False Alarm and False Call	1,303	1,244	1,321	1,456
Other	57	38	45	41
Total	23,353	23,968	28,085	32,208
Calls per Day	64.0	65.5	76.9	88.2
Total Calls YoY Growth		2.4%	17.5%	14.7%
EMS Calls Percentage	72%	71%	70%	68%
EMS Calls per Day	46.3	46.3	54.1	60.0
EMS Calls YoY Growth		0.0%	16.7%	10.8%

Table 2: 2018 – 2022: Number of Unit Responses by Call Category

Program	Number of Unit Responses			
	2019	2020	2021	2022
EMS	27,112	27,792	32,807	35,873
Fire	2,184	2,225	2,696	2,576
Rescue	155	165	189	253
Hazardous Condition	686	573	707	716
Service	2,280	3,065	3,626	4,790
Good Intent	3,616	3,963	4,800	6,182
False Alarm and False Call	2,686	2,557	2,865	2,368
Other	110	67	95	79
Total	38,829	40,407	47,785	52,837
Unit Responses per Day	106.4	110.4	130.9	144.8
RFD Responses YoY Growth		3.8%	18.6%	10.6%

Table 3: 2019 – 2022: Number of Incidents by Agency

Agency	Number of Calls			
	2019	2020	2021	2022
Kennewick	10,312	10,418	12,081	13,982
Richland	7,201	7,368	8,675	9,929
Pasco	5,840	6,182	7,329	8,297
Total	23,353	23,968	28,085	32,208
Calls per Day	64.0	65.5	76.9	88.2
Total Calls YoY Growth		2.4%	17.5%	14.7%

Table 4: 2018 – 2022: Number of Unit Responses by Agency

Agency	Number of Unit Responses			
	2019	2020	2021	2022
Kennewick	16,713	17,332	20,538	22,653
Richland	8,728	8,841	10,595	12,016
Pasco	13,388	14,234	16,652	18,168
Total	38,829	40,407	47,785	52,837
Calls per Day	106.4	110.4	130.9	144.8
Total Calls YoY Growth		3.8%	18.6%	10.6%

Table 5: 2022: Number of Incidents by Category

Call Category	Number of Calls	Calls per Day	Call Percentage
EMS	21,883	60.0	67.9%
Fire	847	2.3	2.6%
Rescue	90	0.2	0.3%
Hazardous Condition	325	0.9	1.0%
Service	3,628	9.9	11.3%
Good Intent	3,938	10.8	12.2%
False Alarm and False Call	1,456	4.0	4.5%
Other	41	0.1	0.1%
Total	32,208	88.2	100.0%

Figure 1: 2022: Percentage of Total Incidents Dispatched by Program

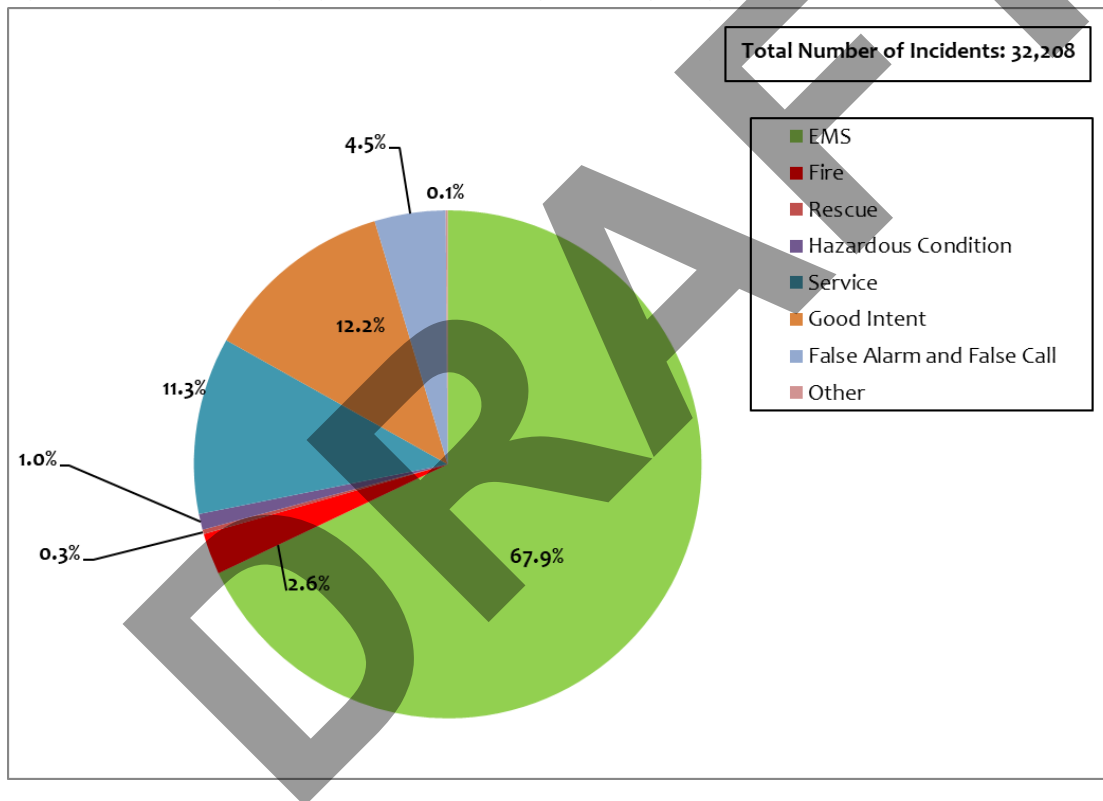


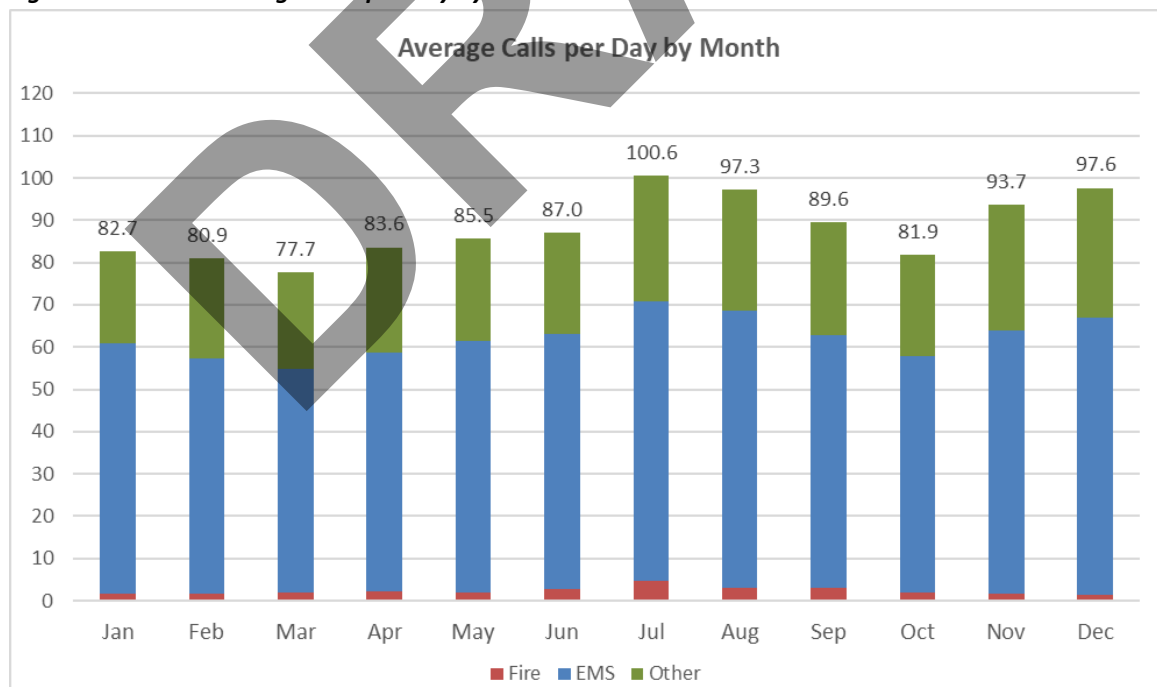
Table 6: 2022: Number of Calls, Number of Responses, and Total Busy Time by Program

Program	Number of Calls	Number of Responses	Average Responses per Call	Total Busy Hours	Average Busy Minutes per Response	Percentage of Total Busy Hours
EMS	21,883	35,873	1.6	18,247	30.5	74.5%
Fire	847	2,576	3.0	2,851	66.4	11.6%
Rescue	90	253	2.8	177	42.0	0.7%
Hazardous Condition	325	716	2.2	318	26.6	1.3%
Service	3,628	4,790	1.3	1,346	16.9	5.5%
Good Intent	3,938	6,182	1.6	836	8.1	3.4%
False Alarm and False Call	1,456	2,368	1.6	673	17.1	2.7%
Other	41	79	1.9	37	28.3	0.2%
Total	32,208	52,837	1.6	24,486	27.8	100.0%

Temporal analyses were conducted to evaluate patterns in community demands. These measures examined the frequency of requests for service by month, day of week, and hour of day. In the following temporal analysis, none fire and EMS calls were grouped into the other category for presentation purpose.

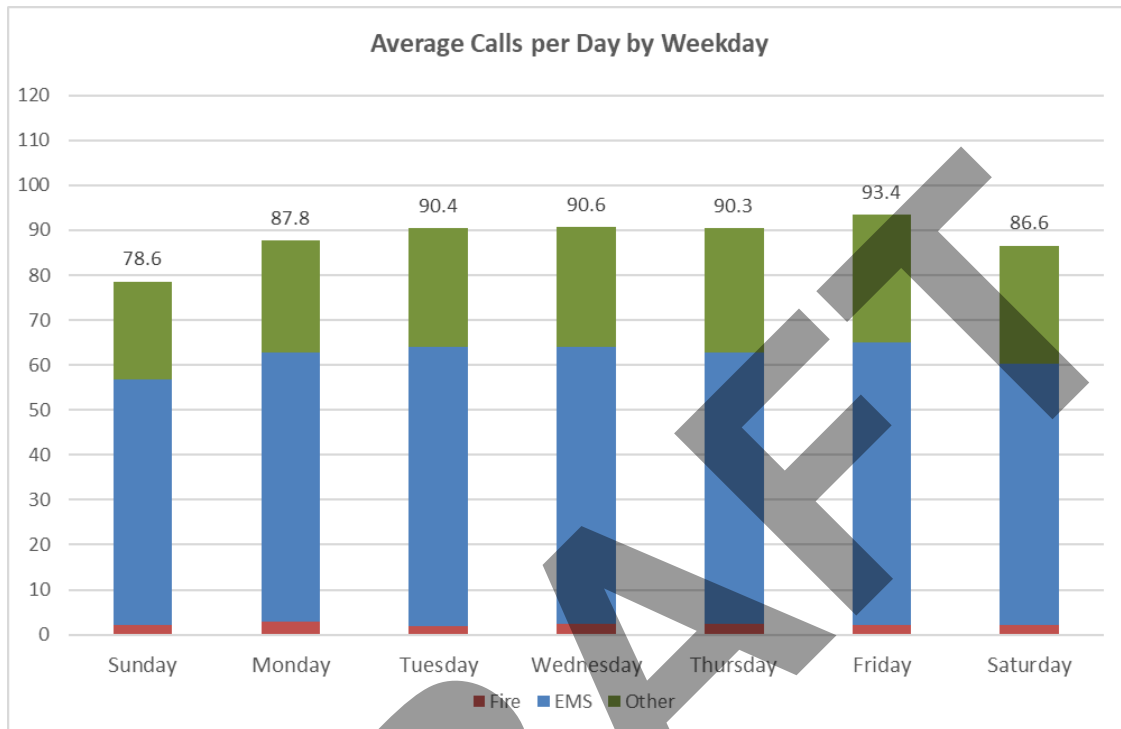
The top three months with the most demands in the descending order are: July (100.6 per day), December (97.6 per day) and August (97.3 per day).

Figure 2: Overall: Average Calls per Day by Month



Similar analyses were conducted for requests by day of week. The data revealed that there is variability in the demand for services by day of week. Sunday was the lowest for the week at 78.6 calls per day. Friday has the highest frequency of requests for services at 93.4 calls per day.

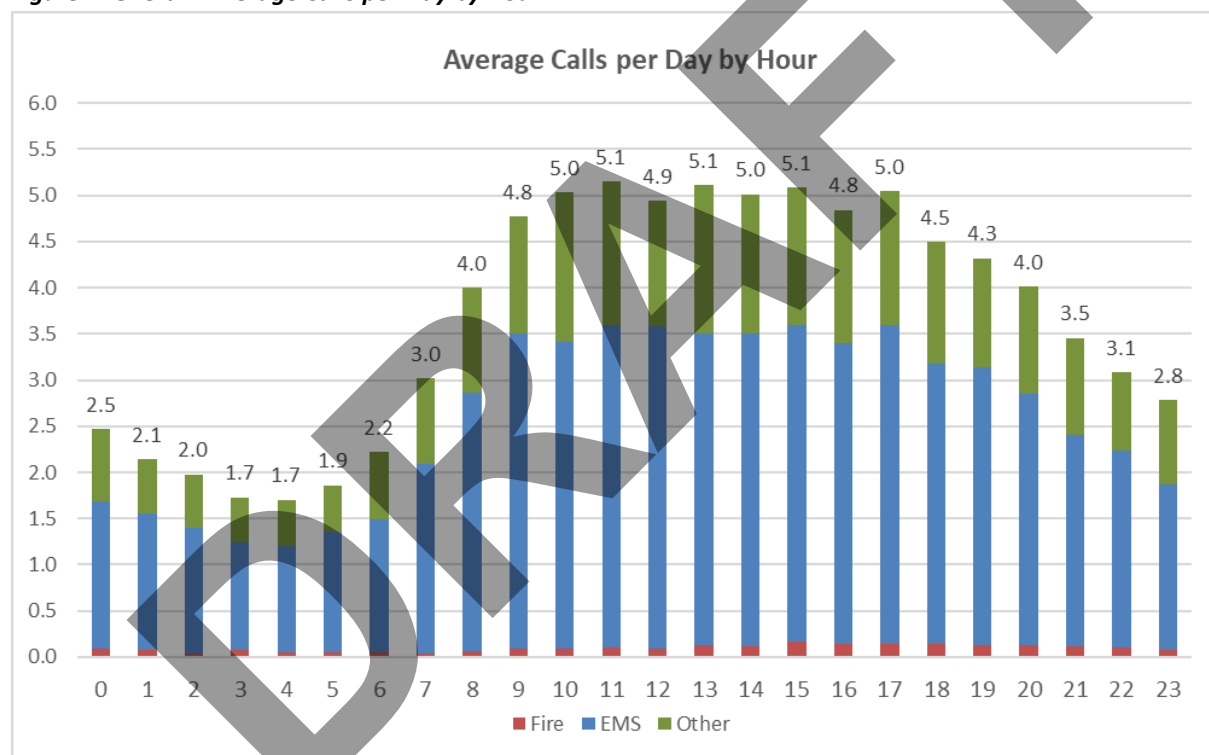
Figure 3: Overall: Average Calls per Day by Weekday



Overall demands were evaluated by the hour of the day. Considerable variability exists in the time of day that requests for emergency services are received. The hours that from midnight to 0600 are low demand hours of the day. While the middle of the day has the greatest frequency of calls, specifically the hours that begin at 0900 and 1700 averaging above 4.7 calls per hour. The average number of calls per hour is 3.67 per day. The hour with the peak demand is at 1100.

To provide a more granular understanding of the community's demand for emergency services, this temporal analysis included the average number of calls per hour. In other words, when referring to the figure below, the busiest hour is at 1100 with 1,879 calls during that hour. The average number of calls per hour is a daily average for those 1,879 calls if they were equally distributed. Therefore, the busiest hour per day would be at 1100 with an average hourly call volume at 5.1 calls per day. The second busiest hour is at 1300 with 1,864 calls during the hour, and averaged 5.1 calls per hour.

Figure 4: Overall: Average Calls per Day by Hour



Overall, units from the three agencies made 52,837-unit responses. Ambulance and rescue units averaged 88.5-unit responses per day, engine units averaged 39.9 per day and truck units averaged 3.5 per day. 78% of Ambulance responses were related to EMS calls.

Table 7: Number of Unit Responses by Unit Type and Program

Unit Type	# of Responses								Total
	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm & False Call	Other	
Ambulance/Rescue	25,240	300	175	1,484	1,565	1,712	565	1,245	32,286
Engine	8,176	1,287	629	1,112	612	1,071	848	835	14,570
Battalion Chief	1,995	358	204	450	148	485	160	149	3,949
Ladder	365	258	110	167	73	143	100	61	1,277
Other	97	126	68	47	349	51	9	8	755
Total	35,873	2,329	1,186	3,260	2,747	3,462	1,682	2,298	52,837

Table 8: Average Number of KFD Unit Responses per Day by Unit Type and Program

Unit Type	# of Responses per Day								Total
	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm & False Call	Other	
Ambulance/Rescue	69.2	0.8	0.5	4.1	4.3	4.7	1.5	3.4	88.5
Engine	22.4	3.5	1.7	3.0	1.7	2.9	2.3	2.3	39.9
Battalion Chief	5.5	1.0	0.6	1.2	0.4	1.3	0.4	0.4	10.8
Ladder	1.0	0.7	0.3	0.5	0.2	0.4	0.3	0.2	3.5
Other	0.3	0.3	0.2	0.1	1.0	0.1	0.0	0.0	2.1
Total	98.3	6.4	3.2	8.9	7.5	9.5	4.6	6.3	144.8

This analysis focused on the first arriving units of all distinct incidents. The mean (average) turnout time was 72 seconds, travel time was 282 seconds (four minutes 42 seconds), and turnout and travel time was 354 seconds (five minutes and 54 seconds). The average turnout and travel time is the same as the sum of the average turnout and travel time.

The performance for turnout time at the 90th percentile was 130 seconds (two minutes and 10 seconds), travel time was 466 seconds (seven minutes 46 seconds), and turnout and travel time was 545 seconds (nine minutes, 5 seconds). Please note that the summation of 90th percentile turnout time and 90th percentile travel time is not the same as 90th percentile turnout and travel time.

Table 9: Average Turnout and Travel Time of First Arriving Units by Program

Program	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
EMS	1.1	4.6	5.8	18,820
Fire	1.5	5.0	6.6	673
Rescue	2.3	6.1	8.5	66
Hazardous Condition	1.5	4.7	6.2	270
Service	1.1	5.1	6.2	2,608
Good Intent	1.2	4.6	5.8	1,491
False Alarm and False Call	1.7	4.6	6.3	1,042
Other	1.2	4.8	6.0	34
Total	1.2	4.7	5.9	25,004

Figure 5: Average Turnout and Travel Time by Call Category

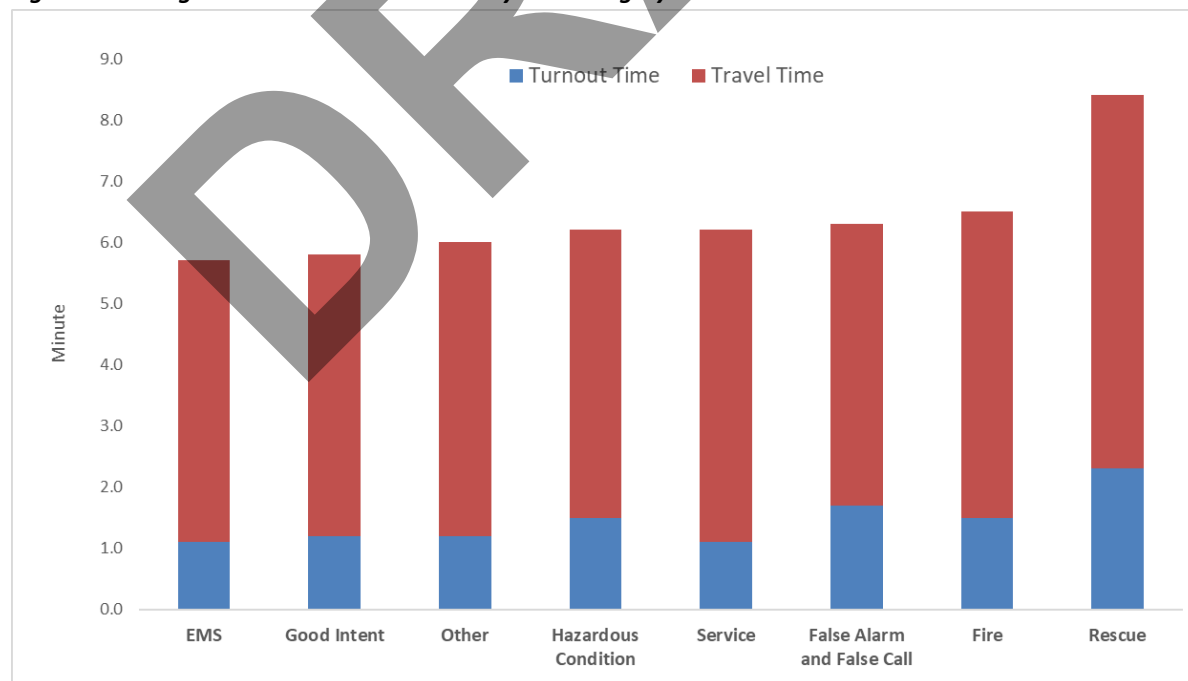


Table 10: 90th Percentile Turnout and Travel Time of First Arriving Units by Program

Program	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
EMS	2.1	7.6	8.9	18,820
Fire	2.8	7.8	9.9	673
Rescue	3.2	11.4	13.2	66
Hazardous Condition	2.7	8.2	10.0	270
Service	2.2	8.9	10.1	2,608
Good Intent	2.3	7.8	9.3	1,491
False Alarm and False Call	2.8	7.9	9.6	1,042
Other	2.0	7.2	8.5	34
Total	2.2	7.8	9.1	25,004

DRAFT

EMS Transport

We analyzed outcomes for the requests for EMS services. The number of EMS transports totaled 13,201, averaging 36.2 transports per day. Approximately 60% of EMS calls have patients being transported to hospitals. Duration of a call is defined as the difference between the first unit dispatch time and the last unit clear time. On average, the duration of a non-transport EMS call was 23 minutes. The duration of a transport call is 2.1 times longer than a non-transport call, averaging 49 minutes per call.

The number one transport destination was Kadlec Regional Medical Center, accounting for 45.8% of the total, and the average duration was 49.2 minutes. The second highest transport destination was Trios Southridge Hospital, which accounted for 34.2% of the total, with an average duration of 52.3 minutes.

Table 11: EMS Transports by First Due Station

First Due Station	Transport		Non-Transport		Transport Rate
	Duration (minute)	Number of Calls	Duration (minute)	Number of Calls	
Station 62	51.2	1,309	21.9	1,088	54.6%
Station 64	48.4	1,308	25.3	526	71.3%
Station 83	48.7	1,209	18.9	671	64.3%
Station 61	59.4	1,175	25.0	914	56.2%
Station 71	39.7	1,151	20.6	620	65.0%
Station 73	40.9	1,146	19.6	637	64.3%
Station 72	51.8	1,043	22.4	869	54.6%
Station 81	42.6	1,010	18.7	665	60.3%
Station 63	56.8	974	25.5	640	60.3%
Station 82	47.5	691	20.7	425	61.9%
Station 65	51.4	674	26.0	450	60.0%
Station 74	45.8	599	22.6	344	63.5%
Station 84	47.6	569	18.3	354	61.6%
Station 75	42.9	22	21.3	14	61.1%
Other	55.5	321	38.0	465	40.8%
Total	48.8	13,201	22.9	8,682	60.3%

Table 12: EMS Transports by Destination

Hospital	Duration (minute)	Number of EMS Calls	Transports per Day	% of Total
(KRMC) Kadlec Regional Medical Center	49.2	6,040	16.5	45.8%
(TSH) Trios Southridge Hospital	52.3	4,521	12.4	34.2%
(LMC) Lourdes Medical Center	41.1	2,153	5.9	16.3%
(KERK) Kadlec Free Standing ER	47.6	335	0.9	2.5%
Other	42.2	152	0.4	1.2%
Total	48.8	13,201	36.2	100%

We analyzed variation of total EMS requests and transport requests by the hour of the day and the average hourly rate of requests. The variation of total EMS requests and EMS transport reports followed a similar pattern. The busiest period for EMS and EMS transport requests was between 0900 and 1700. Requests by hour of the day are represented below.

Figure 6: Average EMS Calls and EMS Transports per Day by Hour of Day

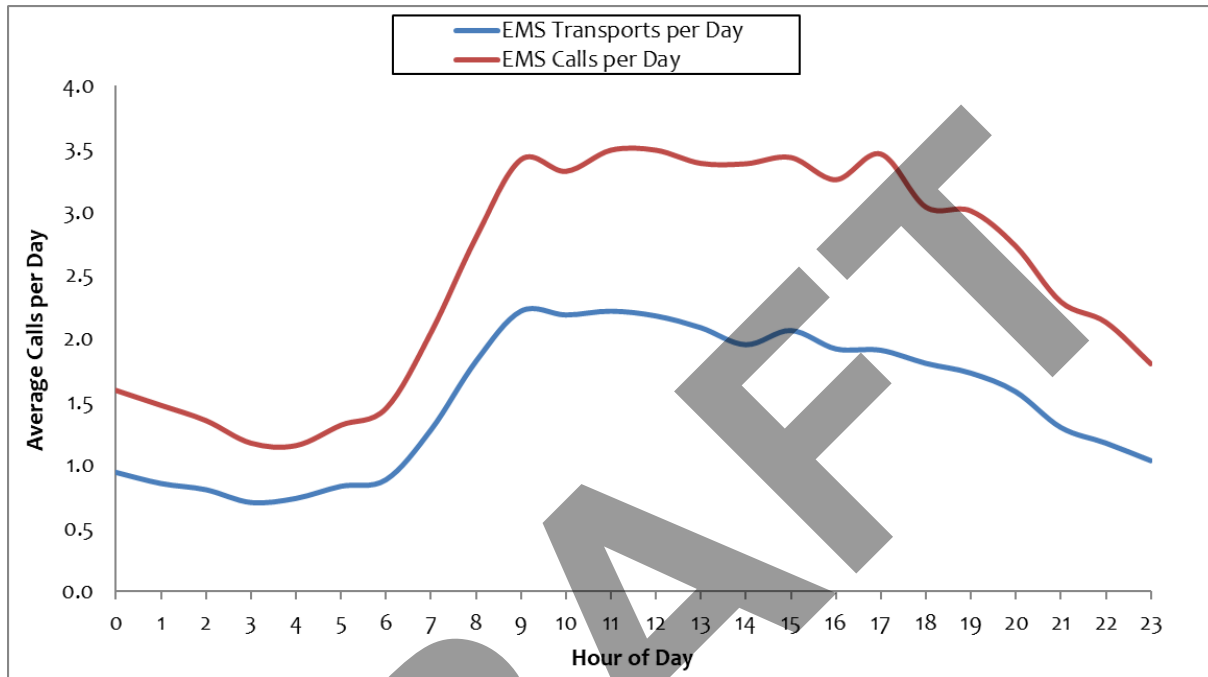


Table 13: Total EMS Calls and EMS Transports and Average per Day by Hour of Day

Hour	Number of EMS Transports	Number of EMS Calls	EMS Transports per Day	EMS Calls per Day	Transport Rate
0	343	580	0.9	1.6	59.1
1	311	537	0.9	1.5	57.9
2	293	493	0.8	1.4	59.4
3	256	428	0.7	1.2	59.8
4	268	421	0.7	1.2	63.7
5	303	480	0.8	1.3	63.1
6	322	528	0.9	1.4	61.0
7	466	747	1.3	2.0	62.4
8	664	1,021	1.8	2.8	65.0
9	809	1,246	2.2	3.4	64.9
10	798	1,212	2.2	3.3	65.8
11	809	1,273	2.2	3.5	63.6
12	795	1,273	2.2	3.5	62.5
13	761	1,235	2.1	3.4	61.6
14	712	1,234	2.0	3.4	57.7
15	753	1,252	2.1	3.4	60.1
16	700	1,188	1.9	3.3	58.9
17	696	1,262	1.9	3.5	55.2
18	658	1,109	1.8	3.0	59.3
19	630	1,098	1.7	3.0	57.4
20	576	996	1.6	2.7	57.8
21	473	836	1.3	2.3	56.6
22	428	777	1.2	2.1	55.1
23	377	657	1.0	1.8	57.4

Comparison of Workloads by Demand Zone

Another method of assessing the effectiveness of the distribution model is to analyze the demand for services across the distribution model. Workload is assessed at the station demand zone level and at the individual unit level. Analyses illustrate that response areas Station 62, 81 and 83 were the top demand areas.

Figure 7: Department Workload by Station Demand Zone

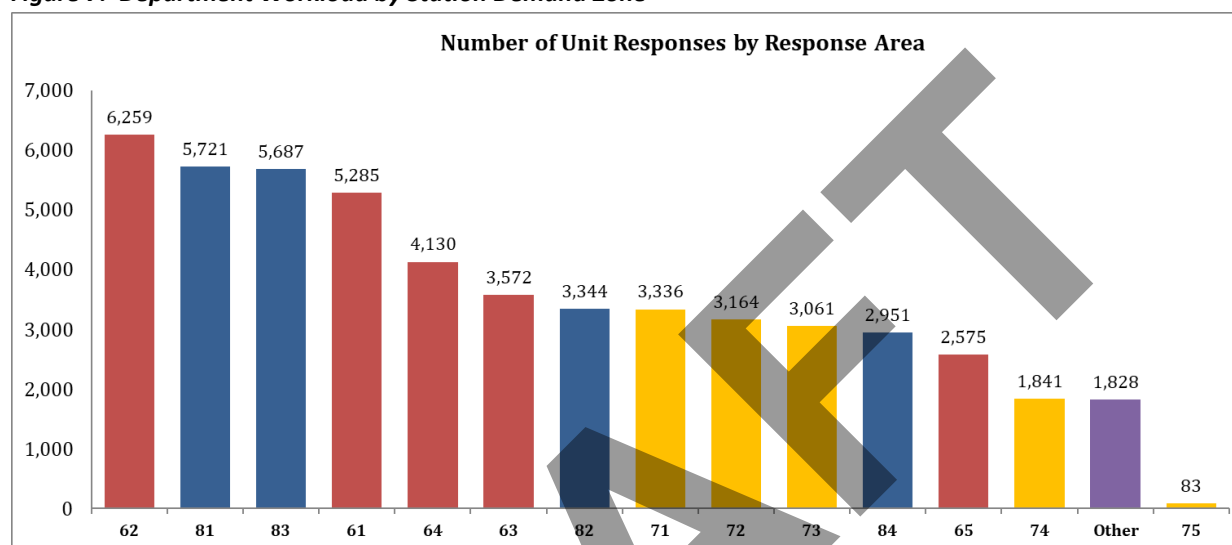


Table 14: Number of Responses by Response Area and Program

Response Area	EMS	Fire	Rescue	Hazardous Condition	Service	Good Intent	False Alarm and False Call	Other	Total	Responses per Day
Station 62	4,158	280	17	47	712	835	189	21	6,259	17.1
Station 81	3,687	357	52	106	268	765	486	0	5,721	15.7
Station 83	4,102	212	10	63	483	483	329	5	5,687	15.6
Station 61	3,718	229	9	71	507	628	122	1	5,285	14.5
Station 64	2,860	214	26	29	483	353	157	8	4,130	11.3
Station 63	2,494	133	36	43	294	357	212	3	3,572	9.8
Station 82	2,413	119	8	124	177	296	190	17	3,344	9.2
Station 71	2,253	149	30	60	325	377	138	4	3,336	9.1
Station 72	2,164	85	5	40	399	354	113	4	3,164	8.7
Station 73	2,074	151	4	51	328	310	135	8	3,061	8.4
Station 84	1,997	223	22	14	302	300	91	2	2,951	8.1
Station 65	1,835	80	9	22	237	292	99	1	2,575	7.1
Station 74	1,173	109	3	32	215	256	53	0	1,841	5.0
Station 75	37	2	3	3	3	12	21	2	83	0.2
Other	908	233	19	11	57	564	33	3	1,828	5.0

First Arriving Unit Response Time by Response Area

Further analyses were conducted to measure the performance of the first arriving unit in each demand zone or response area. Examination of the overall performance at the 90th percentile reveals that Station 82 had the quickest turnout and travel times followed by Station 84, Station 73, Station 71, and Station 73 in order of performance.

Table 15: Mean First Arrival Performance by First Due Station

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 84	1.0	4.1	5.1	679
Station 73	1.0	4.3	5.3	2,401
Station 71	1.1	4.3	5.4	2,411
Station 82	1.1	4.3	5.4	867
Station 62	1.1	4.4	5.6	3,303
Station 81	1.0	4.6	5.6	1,225
Station 83	1.0	4.7	5.7	1,412
Station 61	1.4	4.5	5.9	2,758
Station 74	1.0	5.0	6.0	1,331
Station 72	1.1	5.0	6.1	2,523
Station 63	1.3	5.0	6.4	2,095
Station 65	1.4	5.0	6.5	1,466
Station 64	1.3	5.3	6.6	2,468
Station 75	1.2	5.5	6.8	65
Total	1.2	4.7	5.9	25,004

Table 16: 90th Percentile First Arrival Performance by First Due Station

First Due Station	Turnout Time	Travel Time	Turnout and Travel Time	Sample Size
Station 82	1.8	6.0	7.3	867
Station 84	1.9	6.5	7.6	679
Station 71	2.1	7.0	8.2	2,411
Station 83	1.9	7.4	8.6	1,412
Station 73	1.8	7.3	8.4	2,401
Station 81	1.9	7.5	8.5	1,225
Station 62	2.3	7.2	8.6	3,303
Station 61	2.6	7.7	9.2	2,758
Station 63	2.5	8.3	9.8	2,095
Station 65	2.4	8.3	9.7	1,466
Station 74	2.0	9.0	9.9	1,331
Station 72	2.0	8.7	10.0	2,523
Station 64	2.4	8.8	10.3	2,468
Station 75	2.2	9.9	11.3	65
Total	2.2	7.8	9.1	25,004

Figure 8: 90th Percentile Turnout Time by First Due Station

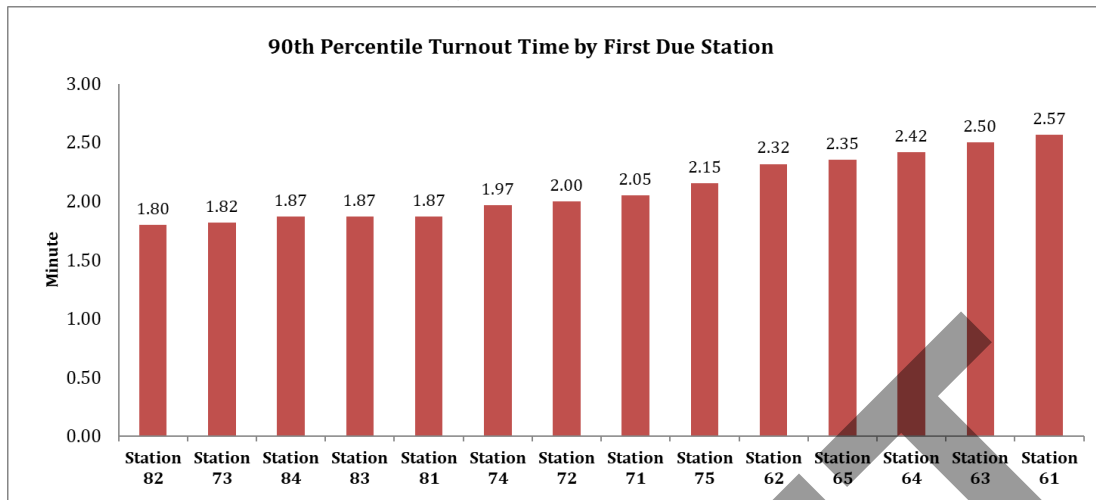


Figure 9: 90th Percentile Travel Time Performance by First Due Station

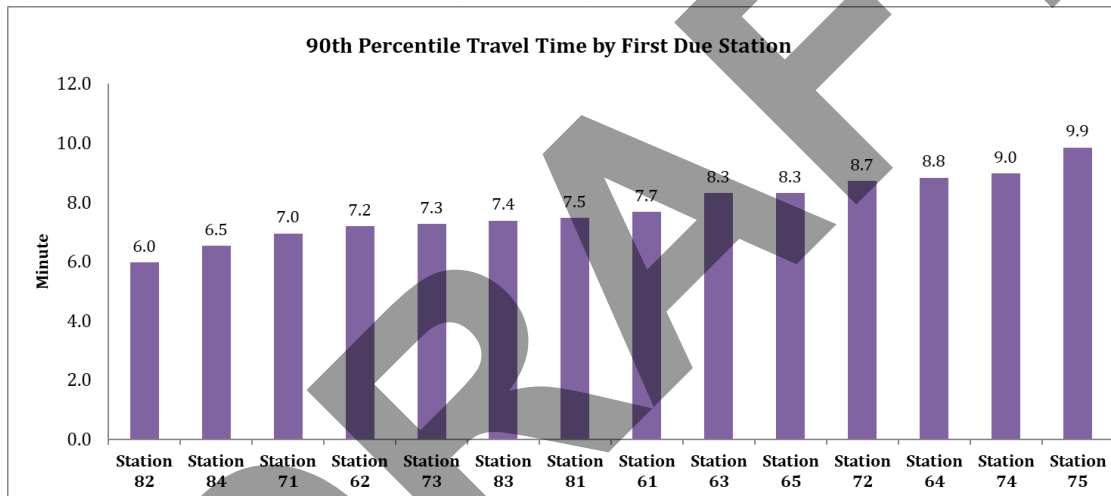
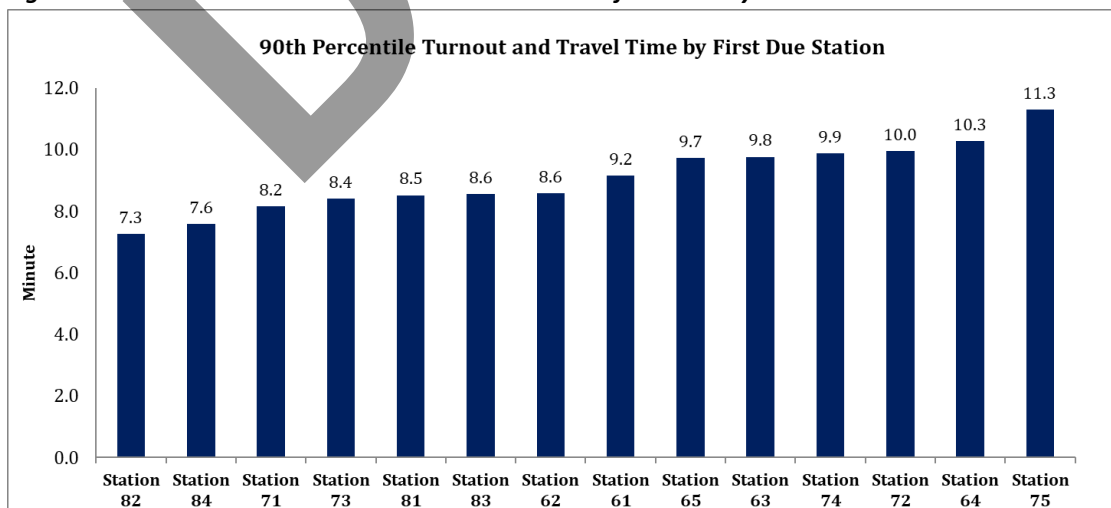


Figure 10: 90th Percentile Turnout and Travel Time Performance by First Due Station



DRAFT



Council Agenda Coversheet	Agenda Item Number: 4. Council Date: 10/24/2023	Category: Info Only
	Agenda Item Type: Presentation Subject: IT Strategic Plan 2024 - 2028 Department: Management Services	
<u>Summary</u> Management Services staff has been working with Sciens Consulting on updating our IT Strategic Plan for 2024-2028 initiatives. This Plan provides a vision to implement a technical path that focuses on the immediate needs of the City while also aligning to long-term strategies and support. Like many municipalities, Kennewick has been faced with changing demographics and an increased demand for 24/7 365 services and online customer-centric service portals. In response, the City has adapted, increasing its use of technology to improve services and responsiveness to citizens. With these changes, the City's technology requirements have grown dramatically over the last decade. The City will continue to be challenged to utilize technology to help offset the increased service demands on staff, and to continually improve efficiency and effectiveness while maintaining a high level of service. The City is also facing increased challenges in terms of cybersecurity and staffing to support all of these new technologies. Cyber attacks against government agencies are up 40% in the second quarter of 2023 compared to the first quarter as attackers have recognized that many state and local governments struggle with providing adequate resources to combat these crimes and protect valuable infrastructure. The City also supports two highly complex IT environments and datacenters for the City and the BiCounty Police Information Network (BiPIN) as well as a secondary backup datacenter for the City. These environments are critical to both the City of Kennewick overall, as well as the local region's Public Safety needs. With limited funds and a lack of specialized expertise, many organizations also have a difficult time meeting the complex compliance mandates particularly related to public safety. Kennewick IT staff work diligently to support the multiple needs, while also focusing on securing the systems and infrastructure. During the workshop, Sciens will present a summary of findings, recommended initiatives for this next 5-year cycle and cost projections. Your packet includes a copy of the presentation, the 2024-2028 IT Strategic Plan, and the appendices to the Plan.		
Attachments: 1. Presentation 2. IT Strategic Plan 3. Plan Appendices		



The City of Kennewick Presentation to City Council

Information Technology Master Plan

October 24, 2023

Project Overview

- Analyzed the current state technology in the City
- Assessed IT's ability to support this technology
- Identified IT operational and business risks
- Developed a plan which outlines the strategic roadmap, timeline and budget
 - Addressed gaps by recommending new strategies and initiatives
 - Allocated resources to the initiatives for a realistic, implementable path forward

Assessment Findings

- The City maintains two complex technical environments: The City's and BIPIN's.
 - BIPIN support requirements presents an increasing workload to the infrastructure support group.
- Customer Service is understaffed relative to workload.
- Within the next five years, 25% of IT Staff is eligible for retirement.
- Over the last several years the IT Department has devoted significant resources in the modernization of the core end user applications systems.
- The IT Department operates primarily in a reactive mode, always “putting out fires”.

IT Challenges

- Much of the City's technical infrastructure is reaching end of life
 - Aging hardware presents increased security and operational risks
- Cyber attacks against government agencies and public sector services are up 40% in the second quarter of 2023 compared to the first quarter.
- The IT Department's focus on maintaining and modernizing the infrastructure and applications systems has limited their ability to further engage users in optimizing the functionality of the newly deployed systems.

Recommended Initiatives

- **Maintain Infrastructure Resiliency, Capacity and Security**
 - Enable IT to continue to optimize service continuity.
- **Reduce IT Operational Risk and Improve Service Delivery**
 - Better serve the existing project needs and reduce the risks of upcoming retirements.
- **Optimize End User Functionality to Promote Better Operational Efficiencies**
 - Enhance the IT department's engagement with the operational departments to improve workflow and functionality within the City.

Maintain Infrastructure Resiliency, Capacity & Security

- Complete Network & Core Switch Upgrades
- Email Management Upgrades
- ESRI Upgrade
- Replace Handsets to Complete Phone System Upgrade
- Environmental Upgrades in the Data Center
- Upgrade Physical Security
- Replace Workstations Across City Departments
- Plan for New City Hall Technology
- Cyber Security Ongoing Improvements

Reduce IT Operational Risk and Improve Service Delivery

- Hire Infrastructure Supervisor
- Hire System Administrator
- Increase Help Desk Staff
- Add New Project Manager
- Add New Business Analyst
- Succession Planning
- Address Gaps in Technology Policies

Optimize End User Functionality to Promote Better Operational Efficiencies

- Re-engage Tyler to Address Gaps in Finance/Permitting Systems
- ERP Implementation (HCM and UB Phases)
- BIPIN Upgrade and Potential CAD Integration
- Engage End Users through Project Governance
- Ongoing Functional Improvements

Calendarized Investment

	Calendarized Investment					Total	Annual Average
	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028		
IT Plan Initiatives							
Maintain Infrastructure Resiliency,Capacity and Security	\$1,297,774	\$459,000	\$216,000	\$314,500	\$216,000	\$2,503,274	\$500,655
Reduce IT Operational Risk and Improve Service Delivery	\$489,252	\$668,668	\$809,351	\$846,069	\$884,622	\$3,697,962	\$739,592
Optimize End User Functionality	\$462,631	\$20,000	\$20,000	\$20,000	\$20,000	\$542,631	\$108,526
Initiatives Total	\$2,249,657	\$1,147,668	\$1,045,351	\$1,180,569	\$1,120,622	\$6,743,867	\$1,348,773

Note: Approx \$1.2million of the 2024 total is already fully funded in the current budget. Primary cost increase for 2024 is recommended staffing increases.



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City of Kennewick

5-Year Information Technology Master Plan

October 11, 2023

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Executive Summary



Introduction to the Project

Project Background

The City's technology requirements have grown dramatically over the last decade. Like many municipalities, Kennewick has been faced with changing demographics and an increased demand for 24/7 365 services and online customer centric service portals. In response, the City has adapted, increasing its technology use to improve services and responsiveness to citizens. The City has also utilized technology to manage the increased demands on staff, improving efficiency and effectiveness while maintaining a high level of service.

With the maturity of digital technologies, their use has become pervasive and ubiquitous. As a result, citizens have come to expect cities to provide the same level of access to services provided by online service providers and retailers. The City is learning how to leverage technology to fulfill these expectations and to provide citizens the information they need in an effective manner. This not only builds a solid relationship, but also develops a trust and confidence in local government.

This Plan provides that vision to implement a technical path forward to meet the needs of the City.

About the Information Technology Master Plan

The City of Kennewick engaged Sciens LLC to assist in the development of a Five-Year Strategic Technology Assessment and Plan. The phases in the development of this Plan were conducted to assess the current state of the City's technology and its ability to support that technology. A technology strategy was developed, and initiatives were identified that moves this strategy forward over the next five years. This Plan is the culmination of this effort.

The City's Technology Vision

To be the technology leader in the local government community while exceeding the service expectations of our customers (City departments, Citizens, and businesses) through the innovative and cost-effective use of technology.

IT's Mission Statement

Provide quality support, technology advisement and stable technology systems to address the requirements of our customers, the operational departments, enabling them to better serve the City's residents.

About this Document

A Modern, Interactive Report

This document has been developed with technology to provide an interactive, engaging experience to the reader and guide them to the areas of most interest.

Hyperlinks are embedded throughout the document that readers can click on to navigate to different topics in the report.

Starting with page 6, Digital Assessment Readout, the reader can click on the Sciens Functional Maturity/Risk Level score associated with each assessed area to navigate them to the summary of those findings.

Then, if the reader would like to further explore the detail of the findings, they can click on the Sciens Functional Maturity/Risk Level score on that page (7-17).

At any time, any point in the document, the reader can click on the Sciens logo in the upper right-hand corner to return to starting point of each section's maturity Assessment Scores.

Digital Assessment Readout

Sciens' Method for Assessing the City's Current Technical Environment

Data Gathering and Interviews

Sciens began by sending out data gathering toolsets and surveys to get an understanding of the environment as it sits today. Then, through virtual interviews, a thorough examination of how each department utilizes information technology systems in support of their business objectives was completed.

Sciens collected, analyzed, and applied this information to our Digital Government Model to calculate a maturity score in each of the 22 areas assessed shown on the right. This method of assessment ensures that the major gaps in the City's environment are identified so that these can be placed in the highest priority when projects are developed in the next phase.

Assessment Scale

Category	Description	Functional Maturity/ Risk Level
Optimized	Best Practice in the Industry	5
Managed	Mature or Fully Applied Practice	4
Defined	Progressing Performance	3
Repeatable	Improvements Identified	2
Initial	Needs Significant Improvement	1

The City of Columbia Heights' Current Environment Assessment

Area Assessed	Functional Maturity/ Risk Level
Strategy	
Fiscal Benchmarking	3
Strategic Alignment	2
IT Strategic Thinking and Planning	2
City's Technology Direction	3
Governance	
Relationship Governance	1
Customer Engagement	1
Policies	3
Architecture	
Server Storage and Backup	4
Data Center	3
Network	2
Network and System Management	3
End User Computers	4
Mobility	3
Telephony	4
GIS	2
Enterprise Applications	3
Business Continuity	1
Security Risk	3
Organization	
Staffing Levels	2
End User Support	1
Staff Development	3
Organizational Structure	2

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Strategy

Summary Findings of the Areas Related to Strategy

Fiscal Benchmarking

- The IS budget (operating and capital) is low compared with benchmarking data; staffing, infrastructure and network budgets should be increased while applications costs should be reduced through consolidation of softwares
- Chargeback costs to operational departments are not clear due to a lack of detail of IS services related line items

Strategic Alignment

- City Management and IS Management are not in alignment regarding the strategy of technology in the City; City Management wants better Leadership, Collaboration and Customer Service while IS Management would like to keep the limited scope of services it performs today

IS Strategic Thinking and Planning

- IS strategic thinking is somewhat simple; they see themselves as technology maintainers and not as enablers for technology change
- Focus should turn to building better relationships with outside departments and becoming advisors for the City

Area Assessed	Functional Maturity/ Risk Level
Strategy	
Fiscal Benchmarking	3
Strategic Alignment	2
IT Strategic Thinking and Planning	2
City's Technology Direction	3

For full detail, click on the Functional Maturity/Risk Level Score

City's Technology Direction

- The view of technology in the City today is mainly focused on business process improvement and reliable infrastructure
- While technology has improved and grown over the years in the City, the shift from internal to external Citizen technology empowerment is still not considered
- The implementation of BS&A should improve both business processes as well as providing updated technology capabilities to Citizens (e.g., automated bill payments, service requests)

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Assessment Readout

Sciens' Method for Assessing the City's Current Technical Environment

Data Gathering and Interviews

Data gathering toolsets and surveys were administered in order to obtain an understanding of the current environment. This data was corroborated through detailed on-site user and IT staff interviews.

The results of the information gathering process were applied to the Sciens Functional/Maturity Risk Model and used to calculate a maturity score for each of 22 assessment areas (shown here).

This methodology identified areas in Strategy, Governance, Architecture and Organization where the IT department was operating effectively as well as those that required further initiatives and work effort to remediate.

Category	Description	Functional Maturity/ Risk Level
Optimized	Best Practice in the Industry	
Managed	Mature or Fully Applied Practice	
Defined	Progressing Performance	
Repeatable	Improvements Identified	
Initial	Needs Significant Improvement	

The City of Kennewick's Current Environment Assessment

Area Accessed	Functional Maturity/ Risk Level
Strategy	
Fiscal Benchmarking	
Strategic Alignment	
IT Strategic Thinking and Planning	
City's Technology Direction	
Governance	
Relationship Governance	
Customer Engagement	
Policies	
Architecture	
Servers, Storage and Backup	
Data Center	
Network	
Network and System Management	
End User Computers	
Mobility	
Telephony	
Enterprise Applications	
Business Continuity	
Security Risk	
Organization	
Staffing Levels	
End User Support	
Staff Development	
Organizational Structure	

Key Findings

Primary Themes and Discoveries from the Data Gathering and Interviews

The following findings were core discoveries made throughout the data gathering, interviews, and analysis phase.

The City maintains two complex technical environments: The City's and BIPIN's .

- Both are highly resilient yet complex and require higher level of support skills and time spent to maintain and monitor. While there are dedicated resources to both environments, there is little time available to support new projects demands while addressing security and support concerns of ongoing projects. Resources are constrained working through the current projects, while addressing future capacity and replacement planning.

BIPIN requirements affect the Infrastructure Support

- The City is the Operating Jurisdiction for the BIPIN environment providing Records and Jail Management platforms to all public safety agencies in the region. The ongoing implementation of the BIPIN application system has required 17% of the time available to the infrastructure group. This adds demand of time for the group's ability to perform operational functions, security functions, as well as plan out replacement needs.

Within the next five years, 25% of IT Staff is eligible for retirement

- Specific areas that could be affected from these pending retirements include IT Management, GIS, Help Desk, and BIPIN administration as well as multiple Analyst positions (Software and System Analysts). The risk to the City of losing these experienced senior level staff will have to be mitigated through the hiring and training of new key staff. Current staffing levels are already stretched thin and are compressed to take on more new applications or projects without additional resources to plan, test, train, and implement. Succession planning will not be able to be addressed without additional resources available to begin the transition, while also addressing current demand of projects. The city needs additional resources to help with on-going and new projects for long-term support and maintenance.

Key Findings

Primary Themes and Discoveries from the Data Gathering and Interviews

IT Service Desk is understaffed relative to workload

- The IT Service Desk is processing 2020 service calls per available service agent. According to benchmark the optimal is 1785 service calls per available service agent. Consequently, the IT Service Desk staff is already overcommitted to daily responsibilities while also helping to support ongoing and new project demands as they related to hardware and software. Projects from other departments, new building build outs, cyber security work (end point to desktops and laptops) all compete for Service Desk staff that are already overcommitted.

IT Department operates primarily in a reactive mode

- The IT department functions are primarily 52% reactive and unplanned. This interrupts project implementation, planning, and delivery functions and prioritizes immediate problem resolution over future planning functions. The department needs additional resources to help plan, communicate, and implement projects. In addition, the department needs resources to help define requirements, scope, and service delivery in an effort to be effective in delivery planned and unplanned (out-of-band) projects that disrupt defined planned work.

End users need Guidance Optimizing the Systems that Have Been Deployed

- End users have expressed the need to bridge the gap between IT and business functionality. The IT Department should explore hiring and adding a Business Analyst to increase efficiency, communicate their findings and strengthen the implementation process with vendors. This position can help to define requirements with the departments, research options that address the needs, define integrations and reporting needs, to allow current staff to focus on the technical solutions. In addition, this position can function as a conduit to the departments helping to identify out-of-band projects in advance and get them into the Steering Committee review process for prioritization before the department commits to a vendor without IT input.

Strategy Findings

Overall Technology Vision for the City

Fiscal Benchmarking

- The City is slightly lower than industry benchmarks in their overall IT spending as a percentage of budget (2.87% vs 2.99%)
- IT Operating Expenditures are lower than industry benchmarks, while IT Capital Expenditures are 10% greater, than the benchmark;
 - This higher capital cost is primarily attributable to the sophisticated network and server infrastructure

Strategic Alignment

- City and IT Management have similar objectives. Both are focused to IT as a leader in the City for technology advisory and project management.

IT Strategic Thinking and Planning

- The City is pursuing an IT strategy where the IT department not only is proficient in IT support but also understands the business processes and act as advisors to end user departments. However, the extensive support required in the implementation of software systems (i.e., BIPIN and Enterprise ERP(Munis)) has inhibited IT Management’s ability to fully engage in business process improvements and technology advisory services.

Area Accessed	Functional Maturity/ Risk Level
Strategy	
Fiscal Benchmarking	4
Strategic Alignment	3
IT Strategic Thinking and Planning	3
City’s Technology Direction	3

For full detail, CTRL click over the Sciens Functional Maturity/Risk Level Score

City’s Technology Direction

- The current view of technology in the City is focused on supporting primary systems and enterprise integration, which is limiting support for technology assessments and requests.
- While technology in the City has improved over the years, the shift towards business process improvement and citizen engagement is still in the early stages.
- Over the course of this plan, City Management wants IT to become business enablers not only support, but to lead new projects which enhance user productivity.

Strategy Summary

Overall Technology Vision for the City

Past Technology Strategy

The current technology strategy has been to provide a resilient physical infrastructure and deploy integrated applications. The department has primarily achieved these goals creating a robust infrastructure and soon to be completing the integration of their applications. However, the Department has to manage multiple competing demands that range from daily maintenance and administrative operations, modernization of equipment and infrastructure, internal department requests, ever increasing cyber security threats and remediation, as well as larger enterprise that rely on IT to review, assess, and support.

Future Technology Strategy

In order to address the limitations stated above, the IT Department will be following a strategy that includes expanding their relationships with the end users, providing more comprehensive business process improvements and technology advisory services. This new path forward should incorporate the guiding strategies detailed to the right.

Guiding Strategies

- Think and Plan Strategically; work closely with IT Governance Steering Committee to create an environment that anticipates needs and supports continuous improvements.
- Maintain high performance, resilient and secure infrastructure.
- Provide highly functional business applications.
- Promote functional support and training to maintain competency of the City staff.
- Provide business process guidance to operational departments.
- Support City management with technology advisory services.

Governance Findings

How the City Manages Strategy Implementation

Relationship Governance

- The City has an IT Governance Steering Committee that reviews new technology program requests and provides recommendations in the prioritization of projects.
- The Steering Committee reviews are done as part of the biennial budget development process to allocate both funding and staffing resources.
 - The Committee should also be involved with reviewing new projects that may arise outside of the budget cycle and evaluation it's priority as compared to the overall project listing that was already approved.
 - The IT Governance Steering Committee needs to assess off-cycle requests/priorities that impact projects current underway that trigger IT to be reactionary to meet the new requests at the expense of current work/projects.
- IT assists departments in developing needs and business cases for strategic applications such as ERP selection; however, they lack this type of engagement with regards to non-core departmental application.
 - This in turn results in stand alone applications that may not effectively integrate with core applications.

Customer Engagement

- There is consensus among IT's customers that the Help Desk provides good service. However, customers expressed a need for better access to help desk staff as well as improved communication from IT regarding ticket status.
- As for selection and implementation of systems, IT usually is involved in the major core application purchases, but not always in the department-specific applications.

Area Accessed	Functional Maturity/ Risk Level
Governance	
Relationship Governance	3
Customer Engagement	3
Policies	2

For full detail, CTRL click over the Sciens Functional Maturity/Risk Level Score

Policies

- Current IT policies are antiquated for a mature IT department of this caliber and should be modernized to align to NIST_CSF standards addressing categories of risk in more detail.
- All IT policies need to be reviewed and updated by IT Management to ensure proper coverage of policy from cradle to grave (selection, purchasing, implementation, maintenance, decommissioning, etc.) and for documentation and Support processes to align to policy systemically where possible.

Governance Summary

How the City Manages Strategy Implementation

Effective IT Governance

Success in IT Governance is heavily dependent on the trusted advisor relationship between IT and both City Departments and City Management. For IT Governance to work, the suppliers of IT services and knowledge need to be perceived as trustworthy, professional experts aligned with their clients' requirements. Trust can be developed through multiple methods: awareness programs, joint workshops, IT Management outreach, or most effectively through the establishment of a collaborative project management and analysis process (Project Manager/Business Analyst) that helps us to identify business requirements and support needs, communicates status, and helps to clarify technical solutions into business language for end users in an effort to make informed decisions and dedicated to communicating and collaborating with end user and senior managers.

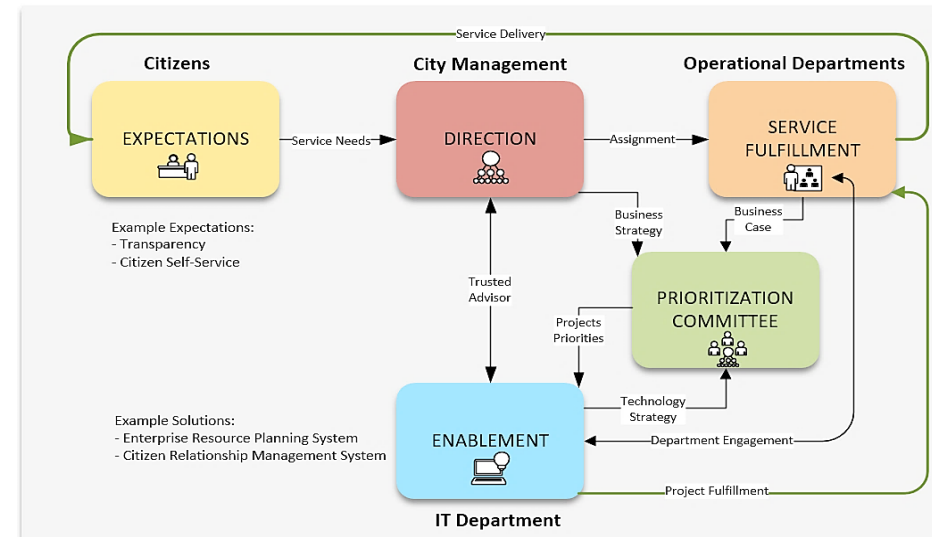
City's Current Governance Process

The City's IT Department has effectively managed the deployment of many long-term technology projects, as well as kept pace with the ever expanding and evolving scope of user needs. The Department has focused on support of core applications and hardware infrastructure, but due to staff

shortages in project management and business analyst it has not been able to effectively obtain the benefits of IT Governance.

Ideal Governance Framework

The technology governance process shown in the graphic below, incorporates the various levels of management decisions (Policy, Infrastructure, Architecture, Business Solutions) into a coordinated effort among the user department, information technology and executive managers. A complete description of the elements in IT Governance is provided by clicking the following [link](#).



Architecture Findings

Technology Infrastructure & Applications Supporting the Vision

Servers, Storage and Backup

- IT supports a complex environment with multiple blade servers with back up redundancy for disaster recovery at Franklin PUD. The department has utilized virtualization where possible, to reduce expense of physical hardware.
- The storage platforms are analyzed and replaced in typical industry time-lines for servers of 4-6 years.
- City has adequate storage and server space and does capacity panning accordingly to handle their current and future needs.

Data Center

- The City's primary data center is located at City Hall, it provides good performance for the City's systems.
- The main data center lacks a fire suppression system.
- The main data center's cooling system is aged and should be considered for further maintenance review.
- In order to provide continuity in data and applications processing, the City data and systems are actively synced to the secondary data center at the Franklin PUD.

Area Accessed	Functional Maturity/ Risk Level
Architecture	
Servers, Storage and Backup	4
Data Center	3
Network	4
Network and System Management	4
End User Computers	4
Mobility	4
Telephony	3
Enterprise Applications	3
Business Continuity	2
Security Risk	3

For full detail, CTRL click over the Sciens Functional Maturity/Risk Level

Score

Network

- The City's network operates in a redundant environment that allows for continuation of some business and IT operations in the event of a disaster; city owned fiber connects the primary downtown Kennewick buildings and 3rd party fiber connects the outer locations.
- The city's application hosting is redundant with 10GB connection between date centers. Current city network connectivity is not redundant however, future plans are being developed to address business continuity via industry standards for fail-over.

Architecture Findings

Technology Infrastructure & Applications Supporting the Vision

Network (Continued)

- Network devices have been maintained and replaced when they reach end-of-life.
- City's network traffic is segregated between fiber strands (i.e., SCADA, Traffic Lights, LMR Radio Backhaul, VoIP, and City Data); allowing the City to isolate and secure the various data transmission services.

Network and System Management

- Network and System Monitoring is performed 24 hours per day, 7 days per week through SolarWinds Orion, a 3rd party provider.
 - City network staff maintains constant communication with network monitoring provider; IT is satisfied with their service level.

End User Computers

- End user PCs and laptops are on an industry standard 4–5-year replacement cycle.
- IT has been actively managing the procurement and deployment of PCs throughout the City.

Mobility

- The City buys and controls the mobile devices used by staff and does not support BYOD.
- IT Department currently using VMware Workspace One to actively manage all mobile devices and is proactive in working with the VAR to expand licensing to include MDM for Agency Laptops as well.

Telephony

- The City utilizes the industry leading telephony system from Cisco. It is reported to be stable and effective.
 - Average age of telephones are 4-5 years. They will be reaching end of life within the scope of this plan.

GIS

- The City uses certain aspects of the Local Government Information Model as recommended by ESRI on the GIS platform (as appropriate for the GIS function); which are core standards for municipalities.

Architecture Findings

Technology Infrastructure & Applications Supporting the Vision

Enterprise Applications

- The City of Kennewick's application architecture is characterized using Tyler integrated applications (i.e., Enterprise ERP "Munis" system and Enterprise Permitting & Licensing (EnerGov)) and some integrated applications. There are a number non-integrated applications. Some ancillary applications (e.g., Liquid Office) will stay in operation until the deployment of the Tyler Integrated systems are completed
 - IT is not an active part of the selection process for many non-core departmental applications; this is primarily due to the lack of business analysts in the IT department who would regularly engage with departmental users to determine functional needs

Departmental Interview Results

- In Progress Projects
 - Human Capital Management: HR and IT staff are actively engaged in the implementation HCM software.
 - Utility Billing: Preparing to work with the IT Department in preparation for UB phase to go live.

- New Identified Needs
 - Parks: Expressed a need for employee scheduling software.
 - Parks: Express a need for special event management software.
 - Public Works: Utilizing Tyler Enterprise Asset Management System. Much of the inventory is not being tracked.
 - Finance: Expressed a need for post cutover user refresher training in budget and end of year closing.
 - Fire: Exploring options for body cameras for fire investigators.
- BIPIN Public Safety Needs
 - Police: Expressed a need for post cutover user refresher training.

Architecture Findings

Technology Infrastructure & Applications Supporting the Vision

Business Continuity

- Several weaknesses were identified in the City's business continuity strategy, and the City should prioritize these measures:
 - Cross-train staff on core IT functions and ensure IT staff resources are available after hours.
 - Develop a Disaster Recovery Plan that details the recovery options and measures/procedures in the event of a loss of key components.
 - In order to ensure business continuity, additional staffing needs to be added for coverage during staff unavailability (i.e., vacation, illness, etc.)
- Conduct regular testing of disaster recovery systems and failover.

Security Risk

- A security assessment was performed measuring the risk of the IT Department in several categories: Infrastructure, Applications, Operations, and Organization. The following table provides a summary of the score by area and the key weakness

Area	Score	Key Weakness
Infrastructure		No Formal Process of off-Boarding
Applications		Limited encryption of sensitive Data
Operations		Antiquated security polices
Human Resources		Limited awareness training

Refer to the [Security Risk](#) section for detailed findings.

Architecture Summary

Technology Infrastructure & Applications Supporting the Vision

Developing a Solid Infrastructure

The City has constructed an effective and reliable architecture with regards to its core infrastructure build-out; the primary and back up data center both provide first-rate performance, and the systems are actively synced to deliver continuity. IT has also standardized on a reliable server platform to host the City's systems. The network was built to be redundant and allows for the continuation of operations if a catastrophic event were to occur.

Integrated Applications

Currently the City is using Tyler integrated applications (i.e., Enterprise ERP "Munis" system and Enterprise Permitting & Licensing (EnerGov)). The City is in the process of implementing their Human Capital Management (HCM) software and working with the IT Department to prepare for the Utility Billing phase to go live. IT is also upgrading their Azure system to latest version and integrating with core base layers for entire GIS system. The City must continue to move forward with the implementation process to build a fully integrated system.

Moving Forward Strategy

In order to continue to operate in a redundant and fully reliable environment, IT must continue to strengthen their network resiliency. The City has budgeted for the addition of advanced authentication, the upgrade of their core switch and network hardware for the year of 2024. These projects will ensure that the backbone of the network is reinforced. Utilize the added resources detailed on the next page to begin increasing end user support, applications management, and technology leadership to promote a holistic, integrated technical approach that is maintainable.

Organization Findings

Structure of Technology Support in the City

Staffing Levels

- When compared to benchmarks, the current IT staffing levels are low by 4 FTEs. Specific weakness exist as follows:
 - Infrastructure Supervisor
 - Existing yet vacant/unfunded position
 - Systems Administrator (Infrastructure)
 - Help Desk Technician
 - Project Manager (Applications)

End User Support

- End users were generally satisfied with the support they receive from the Help Desk and Applications group. Users expressed that improvements could be made in optimizing and configuring department systems.

Staff Development

- Staff receive adequate training relative to benchmarks. However, staff is constrained in their ability to attend training due to workload and limited staff. Efforts should be made to cross train on core systems to fill gaps in job functions when key staff are unavailable.

Area Accessed	Functional Maturity/ Risk Level
Organization	
Staffing Levels	2
End User Support	3
Staff Development	3
Organizational Structure	3

For full detail, CTRL click over the Sciens Functional Maturity/Risk Level Score

Organizational Structure

- The department lacks time for dedicated business analyst and project management beyond the critical systems that can assist end-users in determining their needs and optimizing their interaction with application systems.
- The department is reactive in nature due primarily to the inadequate number of Help Desk service agents relative to the number of service tickets.
- There is limited backup for key staffing including IT Manager and System Administrators.
- There is limited documentation for primary business applications and supporting infrastructure.

Organization Summary

Structure of Technology Support in the City

Existing Environment

The IT organizational structure provides for defined duties which include help desk, infrastructure and applications support. Users are mostly satisfied with the IT's service delivery but would like post implementation assistance to fully utilize the functionality of the new software systems.

The IT organization operates in a highly reactive mode, with over 50% of IT staff handling either tier one or tier two support calls. This environment leaves them with little time to focus on future planning or functional support. This lack of user engagement leaves the departments to make technology decisions without considering the overall integration of their workflows.

In addition, critical staff positions are eligible for retirement, the most critical being the primary System Administrator over Exchange, Security, Active Directory as well as the IT Manager who is also covering the responsibilities of infrastructure oversight.

Future Environment

In order to reduce the department's reactive nature a Help Desk technician must be added. To address the need for better forward planning and project coordination a Project Manager / Business Analyst should be added that coordinates with the IT Steering Committee for requests received outside of the IT Governance Committee process.

Additional staff must be added to support core systems administration as well as transition infrastructure oversight being handled by the IT Manager due to a vacant/unfunded position.

For detailed current environment, optimal structural organization and critical staff retirement recommendations refer to the [Organizational Structure Section](#) below.

IT Goals and Initiatives Summary

The table below provides a summary of the goals and initiatives addressed in this Plan. The details for these tactics can be found in the following sections.

Technology Initiatives	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028	Total 5-Year Cost
Maintain Infrastructure Resiliency, Capacity and Security						
A1. Complete Network Upgrades						\$ 58,496
A2. Complete Core Switch Upgrade						\$ 314,512
A3. Email Management Upgrades						\$ 224,000
A4. ESRI Upgrade Project						\$ 50,000
A5. Replace Handsets to Complete Phone System Upgrade						\$ 112,500
A6. Environmental Upgrades in the Data Center						\$ 60,000
A7. Upgrade Physical Security						\$ 250,000
A8. Replace Workstations Across City Departments						\$ 764,766
A9. Plan for New City Hall Technology						\$ 0
A10. Cyber Security Ongoing Improvements						\$669,000
Reduce IT Operational Risk and Improve Service Delivery						
B1. Hire Infrastructure Supervisor						\$ 684,031
B2. Hire a System Administrator						\$ 721,786
B3. Increase Help Desk Staff						\$ 638,762
B4. Add a new Project Manager						\$ 928,455
B5. Add Business Analyst						\$ 349,928
B6. Succession Planning						\$ 375,000
B7. Address Gaps in Technology Policies						\$ 0

**List Continued on Next Page*

IT Goals and Initiatives Summary

The table below provides a summary of the goals and initiatives addressed in this Plan. The details for these tactics can be found in the following sections.

Technology Initiatives	CY 2024	CY 2025	CY 2026	CY2027	CY2028	Total 5-Year Cost
Optimize End User Functionality to Promote Better Operational Efficiencies						
C1. Re-engage with Tyler to Address Gaps in Finance/Permitting Systems						\$ 100,000
C2. ERP Implementation (HCM and UB Phases)						\$ 442,631
C3. BIPIN Upgrade and CAD Implementation Support and Integration						\$ 0
C4. Engage End Users Through Project Governance						\$ 0
C5. Ongoing Functional Improvements						\$ 0
Total Plan Cost						\$ 6,743,867

Investment Summary

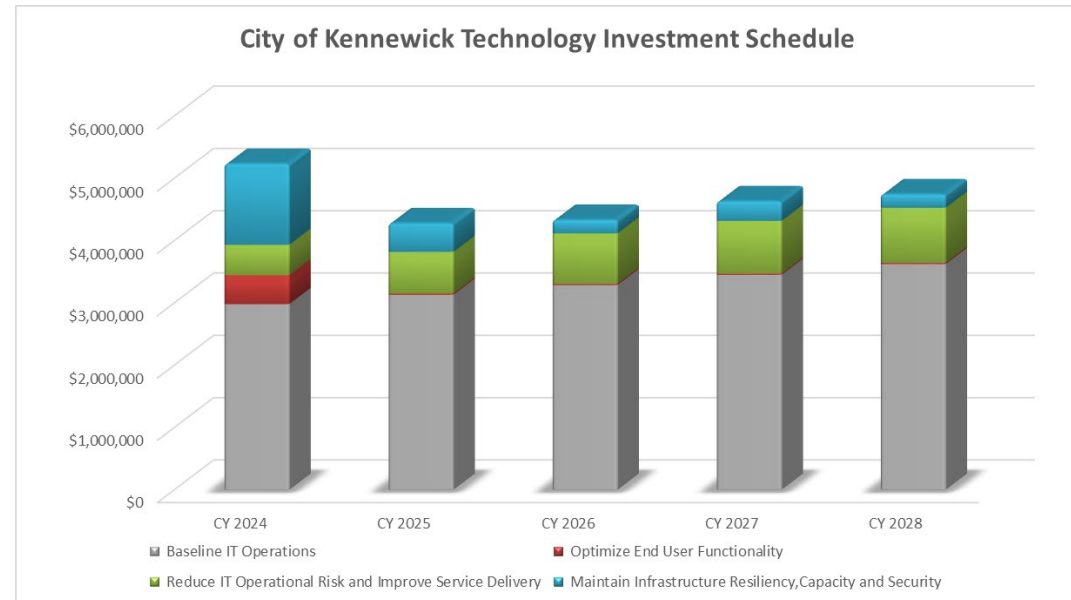
Plan Investment Outline

The 5-year investment summary related to the strategic goals and initiatives is shown to the right. It contains the current baseline budget, grown year over year at a five percent increment for planning purposes. In addition, the investments shown for the Initiatives are shown grouped by associated Goal.

The total investment of the Plan is \$6.7 million over the five-year period. The investment decreases after CY 2024 where it begins to slow down as projects are nearing completion and maintenance/support turn to be the focus. The details for these investments are found in the following sections of this Plan.

Resourcing for each of the initiatives is also included in the details on the following pages.

IT Operational Budget with Plan Investments



	Calendarized Investment					Total	Annual Average
	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028		
IT Plan Initiatives							
Maintain Infrastructure Resiliency, Capacity and Security	\$1,297,774	\$459,000	\$216,000	\$314,500	\$216,000	\$2,503,274	\$500,655
Reduce IT Operational Risk and Improve Service Delivery	\$489,252	\$668,668	\$809,351	\$846,069	\$884,622	\$3,697,962	\$739,592
Optimize End User Functionality	\$462,631	\$20,000	\$20,000	\$20,000	\$20,000	\$542,631	\$108,526
Initiatives Subtotal	\$2,249,657	\$1,147,668	\$1,045,351	\$1,180,569	\$1,120,622	\$6,743,867	\$1,348,773
Baseline IT Operations	\$2,978,348	\$3,127,266	\$3,283,629	\$3,447,811	\$3,620,201	\$16,457,255	\$3,291,451
TOTALS	\$5,228,005	\$4,274,934	\$4,328,980	\$4,628,379	\$4,740,823	\$23,201,122	\$4,640,224

City Goals and Projects



Introduction to Goals and Projects

This section details the specific goals and associated initiatives identified as a part of this 5-year strategic plan. The following goals were established as a result of the assessment process to fill the gaps of where the City currently is and where it wants to be over the course of the next several years.

Maintain Infrastructure Resiliency, Capacity and Security

Reduce IT Operational Risk and Improve Service Delivery

Optimize End User Functionality to Promote Better Operational Efficiencies

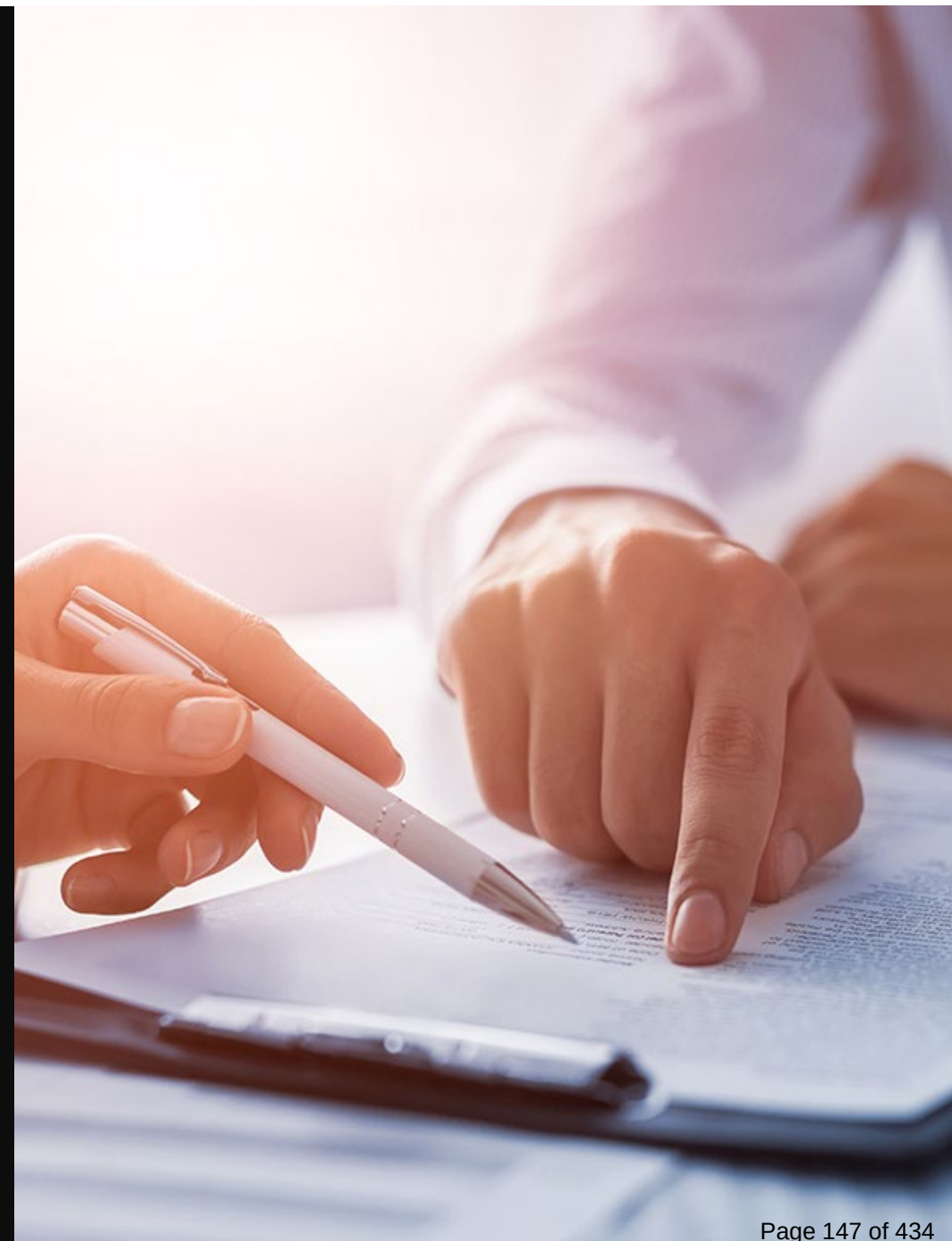
The following pages outlines these goals with their recommended projects. Each project has a background of what was discovered, a short-term strategy to address the finding, a long-term vision of what the City wants to achieve, and associated investments, timelines, and required resourcing in order to accomplish the initiative.



Maintain Infrastructure Resiliency, Capacity and Security

Basing your technical architecture on prominent standardized systems is a practical strategic decision. In order to meet City staff's and citizen's expectations, the City must maintain the underlying technology infrastructure and protect its investments. In addition, IT needs to continue to devote resources into the maintenance, modernization, and risk mitigation of the City's technology infrastructure.

The following projects outline the technical environment recommendations with associated initiatives in the goal of maintaining a stable and resilient infrastructure.



Complete Network Upgrades

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- Access Layer switching equipment is reaching end-of-life and needs to be replaced.
- It was identified prior to the 23/24 Biennium that 12 switches are due for replacement.
 - 12 – 48 port switches.
 - 2 – 24 port switches.

Short Term Strategy

- Upgrade firmware to the latest acceptable version.
- Apply a City standard configuration.
- Add the devices to SolarWinds to capture configuration changed and log files.
- Deploy and decommission old equipment.
- Communicate outage during the deployment phase.

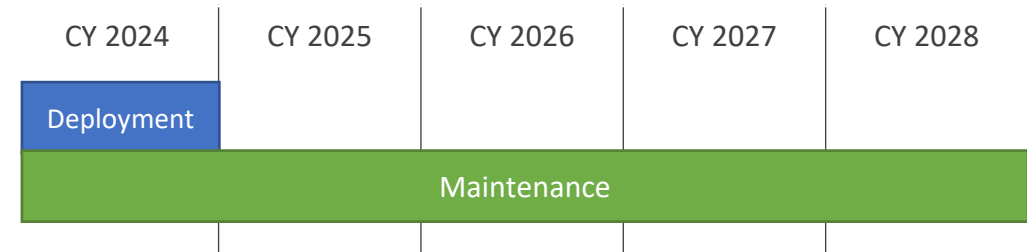
Long Term Vision

- Quality communications and internet experience with reinforced reliability and performance.
- Maintain full disaster recoverability in the event of network interruption.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Network Hardware/Software Replacement	\$58,496	\$0	\$0	\$0	\$0
Total Project Cost	\$58,496	\$0	\$0	\$0	\$0

Timeline



Required Resourcing

-  1 IT Manager for 3 months.
-  1 Network Administrator (Continuous).

Complete Core Switch Upgrades

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- The City of Kennewick's backbone network infrastructure is centrally located within City Hall. This mission critical Core switch replacement is needed to replace aging and outdate equipment. The last time this effort was done was in 2016 as part of the first strategic plan. The considerations for this replacement include a secondary data center, unlike 2016.

Short Term Strategy

- Upgrade firmware to the latest acceptable version.
- Apply a City standard configuration.
- Add the devices to SolarWinds to capture configuration changed and log files.
- Deploy and decommission old equipment.
- Communicate outage during the deployment phase.

Long Term Vision

- Quality communications and internet experience with reinforced reliability and performance.
- Maintain full disaster recoverability in the event of network interruption.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Core Switch Upgrade	\$64,129	\$0	\$0	\$0	\$0
Pure Flash Storage(22TB)	\$160,000	\$0	\$0	\$0	\$0
Two Blade Addition	\$90,383	\$0	\$0	\$0	\$0
Total Project Cost	\$314,512	\$0	\$0	\$0	\$0

Timeline

	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Deployment					
Management					

Required Resourcing



1 Project Manager for 6 months.



1 Network Administrator for 6 months.

Email Management Upgrades

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- There are multiple support recommendations for the transition of Microsoft Exchange to Office 365 (G3- &G5) that will impact email management and retention.
- The City needs to continue to work with vendors on a hybrid-cloud solution while automating as much support as possible to standard tools (archive/purge) provided in the hybrid solutions.
- Solutions need to address on-boarding and off-boarding processes and be resilient with any upgrade process to not lose or corrupt data.

Short Term Strategy

- Standardize and simplify the City's business application environment by upgrading all PC's and laptops to Microsoft 365 Government.
- When deploying 365, review email filtering to address complaints within the departments.
- Confirm MDM solutions adhere to Microsoft's application environment, to actively track and manage PCs and mobile devices.

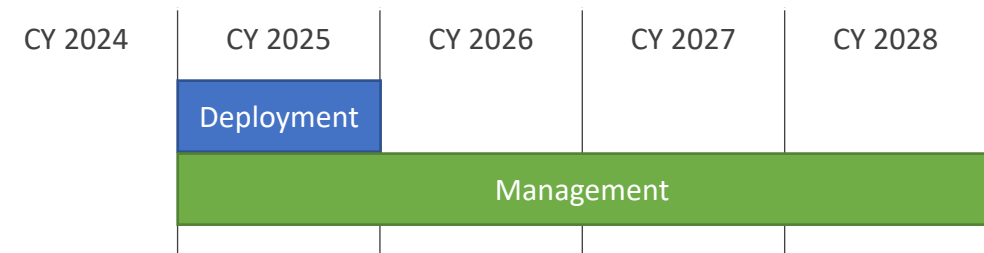
Long Term Vision

- Keep current with business application updates, better automate the security of the email, and more efficiently manage the desktops and mobile devices in the City.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
MS 365 Subscription	\$0	\$0	\$48,000	\$48,000	\$48,000
Email Retention Software	\$0	\$80,000	\$0	\$0	\$0
Total Project Cost	\$0	\$80,000	\$48,000	\$48,000	\$48,000

Timeline



Required Resourcing



1 Systems Administrator for 12 months.

ESRI Upgrade Project

Maintain Applications Supporting the Vision

Assessment Findings

- ESRI will be transitioning to a new service-based editing model.
- GIS System will be rebuilt on new on-premise virtual servers.
- Project planning is underway describing the new system and list of tasks required to build and migrate new system.

Short Term Strategy

- Build new enterprise database.
- Migrate data from existing database to new data base.
- Replace ArcGIS Map with ArcGIS Pro as the primary GIS data editing software and rebuild interfaces and functional tools as needed.

Long Term Vision

- Strengthen and modernize GIS system to improve GIS Architecture.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
GIS Upgrade	\$0	\$0	\$0	\$0	\$0
Utility Network Implementation Consulting	\$30,000	\$0	\$0	\$0	\$0
Parcel Fabric Implementation Consulting	\$20,000	\$0	\$0	\$0	\$0
Total Project Cost	\$50,000	\$0	\$0	\$0	\$0

Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Deployment				
Planning				

Required Resourcing



1 Project Manager for 6 months.



1 Software Support Analyst II/GIS for 6 months.

Replace Handsets to Complete Phone System Upgrade

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- In order to maintain the functionality and security of the system the 14 VoIP routers were upgraded in 2023 but the remaining work of replacing handsets still needs to be completed. Complete Phase 2 of the Phone System project and replace handsets.

Short Term Strategy

- Maintain firmware on routers.
- Replace 301 handsets
- Obtain external implementation support services

Long Term Vision

- Provide a secure and stable infrastructure for the end users who require the phone system for their daily workload.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Routers	\$0	\$0	\$0	\$0	\$0
Handsets	\$0	\$112,500	\$0	\$0	\$0
Total Project Cost	\$0	\$112,500	\$0	\$0	\$0

Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
	Deployment			
	Management			

Required Resourcing

-  1 IT Manager for 3 months.
-  1 System Administrator for 12 months.
-  1 Project Manager for 12 months.

Environmental Upgrades in the Data Center

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- The current main data center has most of the features or modern data centers apart from fire suppression capabilities.
- Fire suppression includes both wet (sprinklers) and dry (gas); for data centers, it is recommended to deploy a dry, chemical fire suppression system to avert the risk of causing damage to the servers.
- Foam on wall is flammable, and area has carpet that should be removed.

Short Term Strategy

- Install a dry fire suppression system at the new data center that will be housed in City Hall.

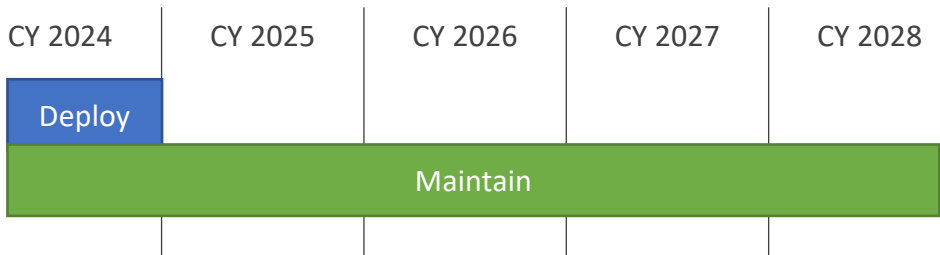
Long Term Vision

- Protect the City’s hardware assets from a fire-related event.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Environmental Upgrades	\$60,000	\$0	\$0	\$0	\$0
Total Project Cost	\$60,000	\$0	\$0	\$0	\$0

Timeline



Required Resourcing

-  1 Project Manager for 6 months.
-  1 Systems Administrator 6 months.

Upgrade Physical Security

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- The City annually identifies additional needs to expand the existing Genetec security system for access control and security cameras.
- The City has set aside funding this biennium to cover these expenses.

Short Term Strategy

- Add lockable equipment racks at City Facilities.
- Continue focusing on access control at City facilities.
- Evaluate PA system at the Southridge Complex.

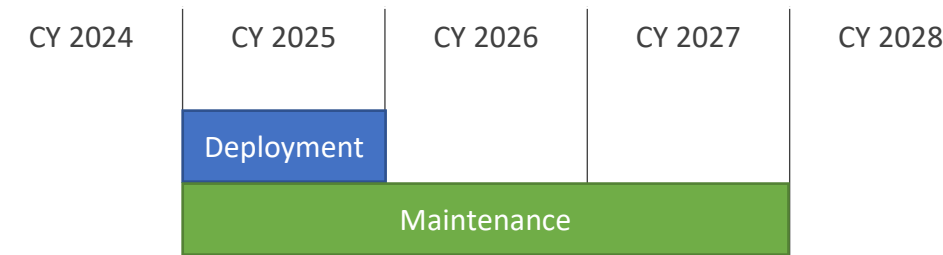
Long Term Vision

- Prevent unauthorized physical access or interference to the City’s infrastructure and information assets.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Security Upgrades	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Total Project Cost	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000

Timeline



Required Resourcing

-  1 IT Manager for 6 months.
-  1 Network Administrator for 6 months.
-  1 Software Support Analyst for 6 months.
-  1 Help Desk Technician for 6 months.

Replace Workstations Across City Departments

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- The lifecycle of desktops and laptop workstations is coming to end. It was identified during the first strategic plan that the City should follow that best practice and replace workstations at the 5-year mark.
- Planned order is in early 2024.
- The City has begun to seek out vendors.

Short Term Strategy

- 400+ machines being replaced (not including MDT's).
- Preliminary work - identifying the models of machines and demo units.
- Identifying machines are due for replacement (warranty expired).
- Deployment of laptops and evaluations of users with higher requirements, public facing locations, or shared workspaces.

Long Term Vision

- Replacement of City hardware in a timely manner to follow best practice for end-of-life cycle of IT assets.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Workstations (600)	\$764,766	\$0	\$0	\$0	\$0
Total Project Cost	\$764,766	\$0	\$0	\$0	\$0

Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Deployment				
Maintenance				

Required Resourcing

-  1 IT Manager for 2 months.
-  1 Project Manager for 12 months.
-  1 Help Desk Technician for 12 months.

Plan for New City Hall Technology

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- The City Hall facility is the head-end of the distributed network between City Hall and FPUD. Ancillary network connections (i.e., FS2) terminate at City Hall.
- Additional work needs to be completed in the network resiliency project in order to have full network redundancy for all city locations.
- This project will have multiple phases and cost for each need to be developed and planned for in the budget cycle once the schedule is determined.

Short Term Strategy

- Inventory for all connections and 3rd party connections.
- Inventory for all circuits and plan for interim circuits prior to cutover.
- Plan on how to incorporate the secondary data center with the new facility.
- Plan conference room and council chamber technology.
- Physical security requirements.
- Plan for consolidation and impact.
- Decommissioning old data center and other City Hall technologies.

Long Term Vision

- Utilizing a modern, secure data center that will house most of the City's applications and data.
- Full disaster recoverability in the event of a catastrophic disaster.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Internal Staff Time	\$0	\$0	\$0	\$0	\$0
Total Project Cost	\$0	\$0	\$0	\$0	\$0

Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Deployment				
Management				

Required Resourcing



1 City Management for 12 months.



1 IT Department for 12 months

Cyber Security Ongoing Improvements

Maintain Infrastructure Resiliency, Capacity and Security

Assessment Findings

- Regular internal and external penetration testing needs to be scheduled annually along with Gap Analysis to ensure NIST compliance.
- Evaluation and enhancements of security gaps will be an ongoing process.

Short Term Strategy

- Identify weaknesses before exploitation.
- Design best practice processes to protect network, devices, programs and data.
- Reduce business risk from cyber threats and attacks.

Long Term Vision

- Increased network security and capacity throughout the City.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Pen Test	\$0	\$50,000	\$0	\$50,000	\$0
Gap Analysis	\$0	\$8,500	\$0	\$8,500	\$0
Remediation	\$0	\$40,000	\$0	\$40,000	\$0
Artic Wolf Upgrade	\$0	\$118,000	\$118,000	\$118,000	\$118,000
Total Project Cost	\$0	\$216,500	\$118,000	\$216,500	\$118,000

Timeline



Required Resourcing

-  1 Network Administrator (Continuous).
-  1 Systems Administrator for 3 months.

Reduce IT Operational Risk and Improve Service Delivery

These initiatives are designed to develop the IT Department's ability to better serve the existing project needs, reduce the risks of upcoming retirements and improve the IT department's engagement with the operational departments. [Recommendations](#) include increasing existing IT staff in order to meet current demand, restructuring the IT Department to support emerging user department needs, and cross-training of critical skills to reduce the over-reliance on retiring staff members.

The following provides detailed initiatives descriptions.



Hire Infrastructure Supervisor

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- The restructuring of the IT Department requires an Infrastructure Supervisor to manage the internal organization and the Infrastructure group.
- This staff will assist the implementation of this Plan over the next 5 years.

Short Term Strategy

- Hire an Infrastructure Supervisor to assist in managing the newly structured department.
- They will be responsible for the following:
 - Ensure the stable operation of the City’s IT infrastructure.
 - Appropriate utilization of insourced and outsourced infrastructure resources.
 - Developing, maintaining, supporting, and optimizing network infrastructure, server infrastructure, data communications, and telecommunications.
 - Scheduling and directing activities to resolve hardware and software problems in timely and accurate fashion.

Long Term Vision

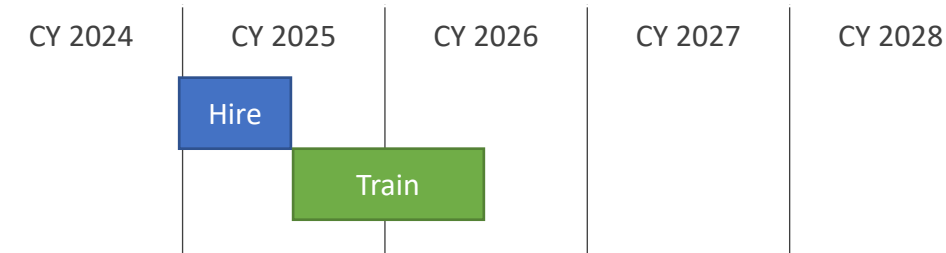
- Effective management of the IT Department to identify, recommend, develop, implement, and support cost-effective solutions for all aspects of the City.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Infrastructure Supervisor	\$0	\$158,703	\$166,639	\$174,970	\$183,719
Total Resource Cost	\$0	\$158,703	\$166,639	\$174,970	\$183,719

*This position has a base salary of \$107,232 with 48% benefits added

Timeline



Required Resourcing

 IT Manager for 9 months.

Hire System Administrator

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- Core Infrastructure functions are being managed by a single individual who is eligible for retirement over the next 5 years.
- To address these gaps, one (1) additional System Administrator I is recommended.

Short Term Strategy

- Hire a System Administrator to provide and maintain infrastructure applications systems.
- Configure infrastructure system to ensure their smooth and reliable operation for fulfilling business objectives and processes
- Work with IT Management and the Executive Leadership Team to assess near – and long-term network capacity needs.
- Create and maintain documentation as it relates to configuration, processes, and service records.
- Develop, implement, and maintain policies, procedures, and associated training plans for administration.
- Transition planning and cross-training.
- They will be responsible for the following:
 - O365
 - MS Active Directory
 - VoIP System

Long Term Vision

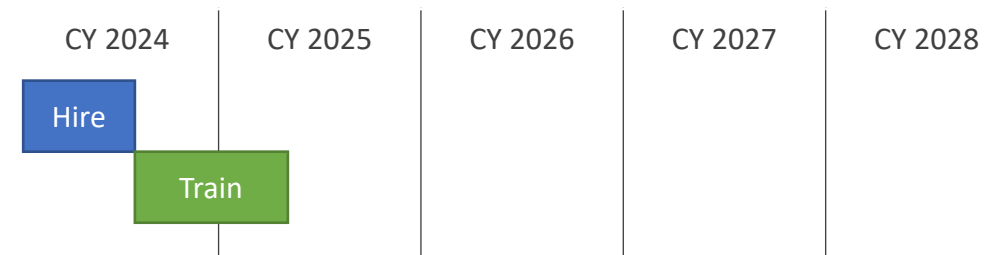
- Understand specific user requirements and configure the systems to support the users' operational needs.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
System Administrator	\$130,625	\$137,156	\$144,014	\$151,215	\$158,776
Total Project Cost	\$130,625	\$137,156	\$144,014	\$151,215	\$158,776

*This projection is based on a mid-point salary of \$88,260 with 48% benefits added

Timeline



Required Resourcing

 System Administrator for 9 months.

Increase Help Desk Staff

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- Currently, the IT Help Desk is low on staff when compared to benchmarks with similarly sized cities.
- As a result, IT first level support is handling more tickets than the optimal amount per available service agent.
- To address these gaps, one (1) additional Help Desk Technician I is recommended.

Short Term Strategy

- Hire one (1) additional Help Desk Technician I to further improve end user technical support to the operational departments.
- Field incoming help requests from end users via both telephone and email in a courteous manner.
- Provide on-site support of physical desktops, hardware, peripherals, printers, etc.
- Receive, provision, and ship IT equipment for existing and new users.
- Follow up and update customer status and information in our End-User Specialist system.

Long Term Vision

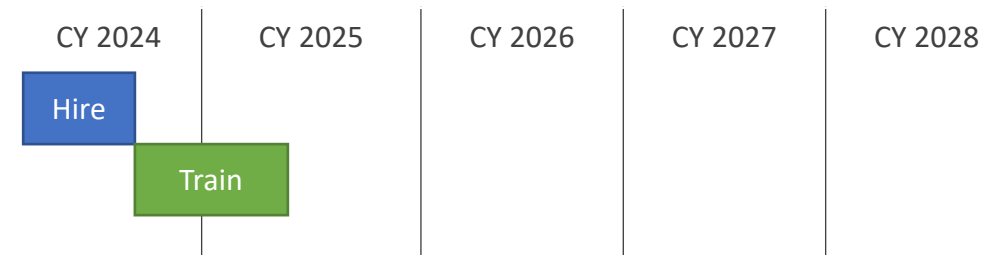
- Better quality end user support for operational departments.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Help Desk Tech I	\$115,600	\$121,380	\$127,449	\$133,821	\$140,512
Total Resource Cost	\$115,600	\$121,380	\$127,449	\$133,821	\$140,512

*This position has a base salary of \$78,108 with 48% benefits added

Timeline



Required Resourcing



IT Service Desk Supervisor for 9 months.

Add New Project Manager

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- IT Department has operated in a reactive manner over the last couple years, IT needs to shift to proactive mindset by assisting leadership and bringing direction to projects.
- This staff will assist in the implementation of this Plan over the next 5 years
- To address these gaps, one (1) additional Project Manager is recommended.

Short Term Strategy

- They will be responsible for the following:
 - Determine and define project scope and objectives.
 - Predict resources needed to reach objectives and manage resources in an effective and efficient manner.
 - Track project costs in order to meet budget.
 - Measure project performance to identify areas for improvement.
 - Provide project updates on a consistent basis to various stakeholders about strategy, adjustments, and progress.
 - Develop and manage a detailed project schedule and work plan.

Long Term Vision

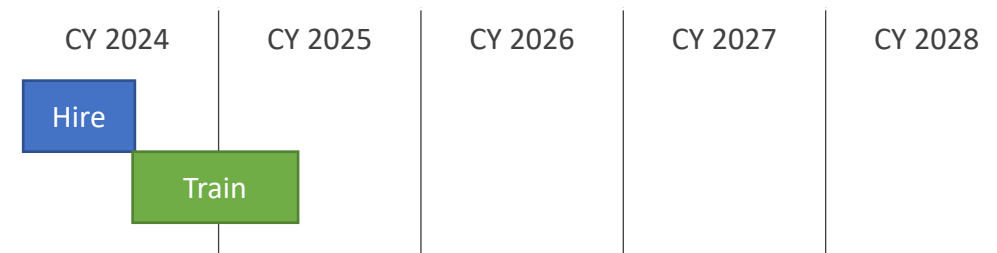
- Ensure that projects are within scope, budget and that all deliverables are dependable and delivered on-time.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Project Manager	\$168,027	\$176,428	\$185,250	\$194,512	\$204,238
Total Project Cost	\$168,027	\$176,428	\$185,250	\$194,512	\$204,238

*This projection is based on a mid-point salary of \$113,532 with 48% benefits added

Timeline



Required Resourcing

 City and IT Management for 9 months.

Add New Business Analyst

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- There is a gap between City Departments and the IT Department in regards of consultation and advisement when it comes to identifying department specific needs.
- Adding a Business Analyst will allow for the organization to shift from a Tactical/Reactive to a more Strategic/Proactive approach.
- To address these gaps, one (1) additional Business Analyst is recommended.

Short Term Strategy

- They will be responsible for the following:
 - Ensure that applications meet business requirements and system goals, fulfill end-user requirements; and resolve system issues.
 - Review and analyze existing applications effectiveness and efficiency, and work with IT manager to develop strategies.
 - Assist in the preparation and documentation of software requirements and specifications, configuration, testing, documentation, and training (as applicable to the project).
 - Cultivate and disseminate knowledge of application-usage best practices.

Long Term Vision

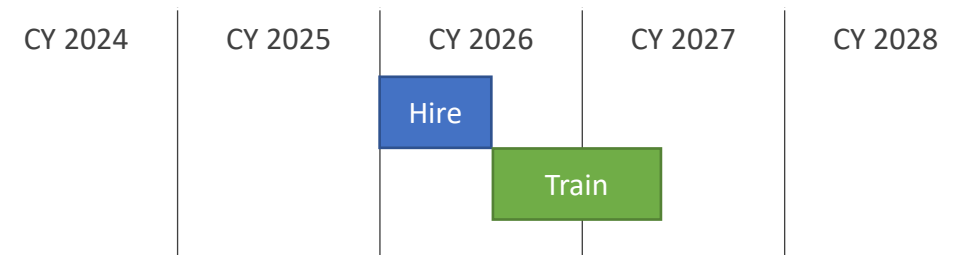
- Work closely with IT Department and City Departments to define user requirements that lead to system changes, development, or the acquisition of third-party systems to meet user needs.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Business Analyst	\$0	\$0	\$111,000	\$116,550	\$122,378
Total Project Cost	\$0	\$0	\$111,000	\$116,550	\$122,378

*This position has a base salary of \$75,000 with 48% benefits added

Timeline



Required Resourcing



IT Manager for 9 months.



Project Manager for 9 months.

Succession Planning

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- With 25% of the staff approaching retirement there is a need for knowledge transfer overlap between the outgoing and incoming staff.
- Current BIPIN position requires a greater technical support.
- The current position is over scoped and although effective, the need is for more technical capabilities.

Short Term Strategy

- Provide training from the outgoing to incoming staff.
- Restructure to BIPIN Administrator to BIPIN System Administrator to maintain Tyler New World BIPIN systems.
- Create and maintain documentation as it relates to configuration, processes, and service records.
- Develop, implement, and maintain policies, procedures, and associated training plans for administration.

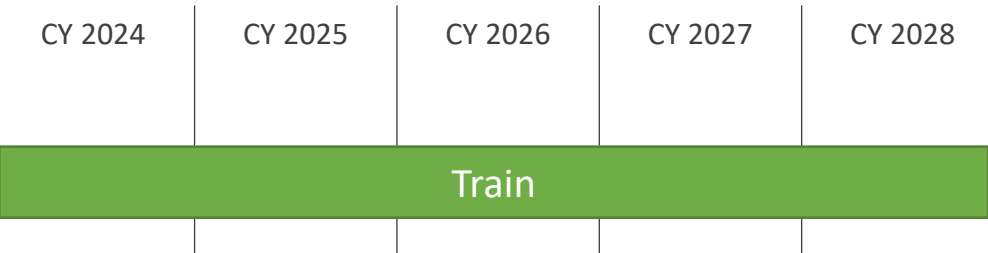
Long Term Vision

- Continue overlap training until all existing staff eligible staff has retired.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Succession Planning	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Total Project Cost	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000

Timeline



Required Resourcing

 Outgoing and Incoming Staff

Address Gaps in Technology Policies

Reduce IT Operational Risk and Improve Service Delivery

Assessment Findings

- IT policies are a mix of both internally-focused and externally focused guidelines to assist the IT Department in managing the operations and allowing users to self-manage their behavior with regards to technology.
- Policies are developed by IT with input from departments and approved by City Management.
- The City needs to formalize the cyber security framework (NIST-CSF) and identify antiquated policies that may be missing or may need to be revised/augmented to align to the framework. Missing policies need to be developed, reviewed, adopted, and enforced.

Short Term Strategy

- Develop and regularly maintain internal and external IT policies to address the following areas currently covered: Examples may include:
 - Internet Acceptable Use (City Staff)
 - Purchasing (IT)
 - Backup (IT)
 - Patch Management (IT)
 - Systems Maintenance (IT)
 - Information Security (IT)
 - Computer Software (IT)
 - Change Management (IT)
 - IT Standards (IT)
 - IT Support (IT)
 - Physical Access (IT)

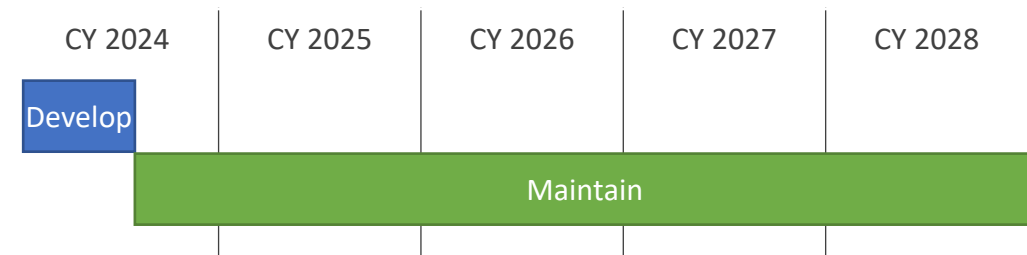
Long Term Vision

- Effective management of the IT Department to implement this Plan will allow for greater success in technology throughout the City

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Staff time only	\$0	\$0	\$0	\$0	\$0
Total Project Cost	\$0	\$0	\$0	\$0	\$0

Timeline



Required Resourcing

 City Management and IT for 6 months.

11/11/2019

The following projects outline the IT related process recommendations with associated initiatives to achieve a better framework for the entire organization.



Re-engage Tyler to Address Gaps in Finance/Permitting Systems

Optimize End User Functionality to Promote Better Operational Efficiencies

Assessment Findings

- The Finance Departments recently implemented the Tyler Munis System for their operational functions. The system did go live, but many of the workflows were not automated, the system is slow, and reporting is challenging due to the poor implementation. The City should identify defined areas for improvement (i.e., budget, accounts payable, purchasing, reporting, etc.) and develop a project plan to address functional process and workflows against current system configuration for process improvement. In addition, the City should focus on change management for end-user adoption. If necessary, reengage Tyler to perform a gap analysis and require Tyler to address any issues and retrain staff on how to properly utilize the system's features.

Short Term Strategy

- Work with Tyler to resolve these issues, retrain staff, identify and complete automation processes and integrations.
- Ensure that the Project Manager and Business Analyst are closely managing this effort as these systems are critical for data validity and reporting.

Long Term Vision

- Address critical issues surrounding workflow and day-to-day operations for Planning/Permitting and Finance.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Tyler Support	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Total Project Cost	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000

Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
		Training	Consulting end-users	

Required Resourcing

-  1 Project Manager for 12 months.
-  1 Applications Support Specialist for 12 months.
-  1 Business Analyst (continuous).

ERP Implementation (HCM and UB Phases)

Optimize End User Functionality to Promote Better Operational Efficiencies

Assessment Findings

- The City recently implemented the Tyler Munis for their ERP system. Ensure workflows are automated, and reporting is configured to meet Department needs. The City should require Tyler to address any issues and train staff on how to properly utilize the system's features. Includes integration with new AMI meters and deployment of Citizen Connect and Decision Engine portals for EnerGov.

Short Term Strategy

- Work with integrator on this initiative since it is a complex project with several new critical interfaces that will need to be built.
- Utilize the newly added IT Project Manager to assist with this effort in conjunction with Tyler Implementation Consultants and IT Support Analyst.

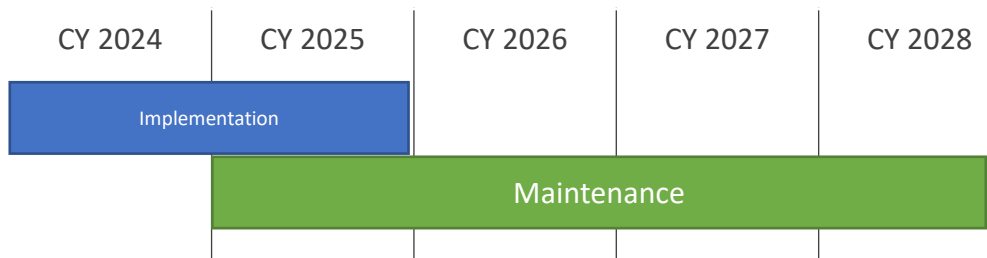
Long Term Vision

- Implement integrated ERP system for HR and Utility Billing.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Tyler Systems	\$442,631	\$0	\$0	\$0	\$0
Total Project Cost	\$442,631	\$0	\$0	\$0	\$0

Timeline



Required Resourcing

-  1 Software Support Analyst for 9 months.
-  1 Project Manager for 9 months.

BIPIN Upgrade and CAD Integration

Optimize End User Functionality to Promote Better Operational Efficiencies

Assessment Findings

- Completion of RMS/JMS is expected at the end of 2023.
- Addition of CAD module and integration are expected in 24/25.
- Cost of CAD software/equipment will be paid by BCES.

Short Term Strategy

- Improve officer, and citizen safety.
- Facilitate coordination and information sharing among the participating agencies.
- Enhance the ability and effectiveness of staff to perform their jobs.
- Facilitate coordinated crime prevention and reduction.
- Provide high levels of data security.
- Provide an open, flexible, reliable technology base for the future.
- Improve data quality.
- Improve data timeliness.
- Increase work process efficiency.
- Provide cost effective/economies of scale for the participating agencies.

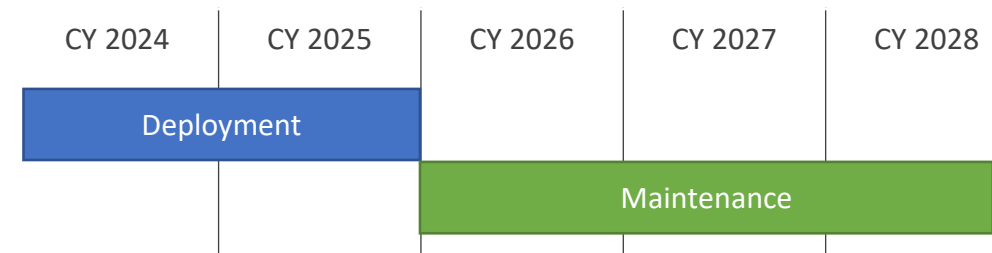
Long Term Vision

- Implementation and integration of both BIPIN and CAD systems.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Staff time only	\$0	\$0	\$0	\$0	\$0
Total Project Cost	\$0	\$0	\$0	\$0	\$0

Timeline



Required Resourcing

-  1 Project Manager for 24 months.
-  1 Software Support Analyst for 24 months.
-  1 Systems Administrator for 24 months.

Engage End Users through Project Governance

Transform the IT Organization to Focus on Better Customer Service and Building Relationships

Assessment Findings

- The current process for technology decisions occur mostly internally within the departments with some input from City Management, but IT at times is not involved in operational department specific applications.
- Because of this lack of formal governance in the City, departments have procured mostly single functionality systems with little integration amongst them; this in turn can lead to disjointed applications architecture that are complex and difficult to manage.

Short Term Strategy

- Leverage existing IT Steering Committee that is comprised of City Management, select department heads, and IT.
- Require all IT projects to go through review by the Steering Committee and develop a process for off-cycle requests that can help assess, prioritize and communicate changes and/or to existing IT work.
- Focus on configuring the overall applications environment and promote data sharing across systems.

Long Term Vision

- Enable the City to make better, long lasting technology decisions.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Staff time only	\$0	\$0	\$0	\$0	\$0
Total Project Cost	\$0	\$0	\$0	\$0	\$0

Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Continuous Engagement				

Required Resourcing

-  1 Management Services
-  Director for continuous effort and collaboration.
-  1 IT Manager
-  1 Project Manager

Ongoing Functional Improvements

Optimize End User Functionality to Promote Better Operational Efficiencies

Assessment Findings

- City Department business requirements, system goals, and end-user functionality needs often are not being identified or resolved by the IT Department.
- Some City Department systems could be configured to improve and leverage the effectiveness and efficiency of these systems.

Short Term Strategy

- Work with operational Departments to research and make recommendations on software products and service in support of procurement and development efforts.
- Collaborate with stakeholders in the testing of new software programs and applications. And document business process, workflows and configurations.
- Cultivate and disseminate knowledge of application-usage best practices, help train as needed and document IT support processes for IT department and vendor (SLAs).

Long Term Vision

- Develop effective intra- and inter- Departmental Relationships.

5-Year Investment

Cost	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Staff time only	\$0	\$0	\$0	\$0	\$0
Total Project Cost	\$0	\$0	\$0	\$0	\$0

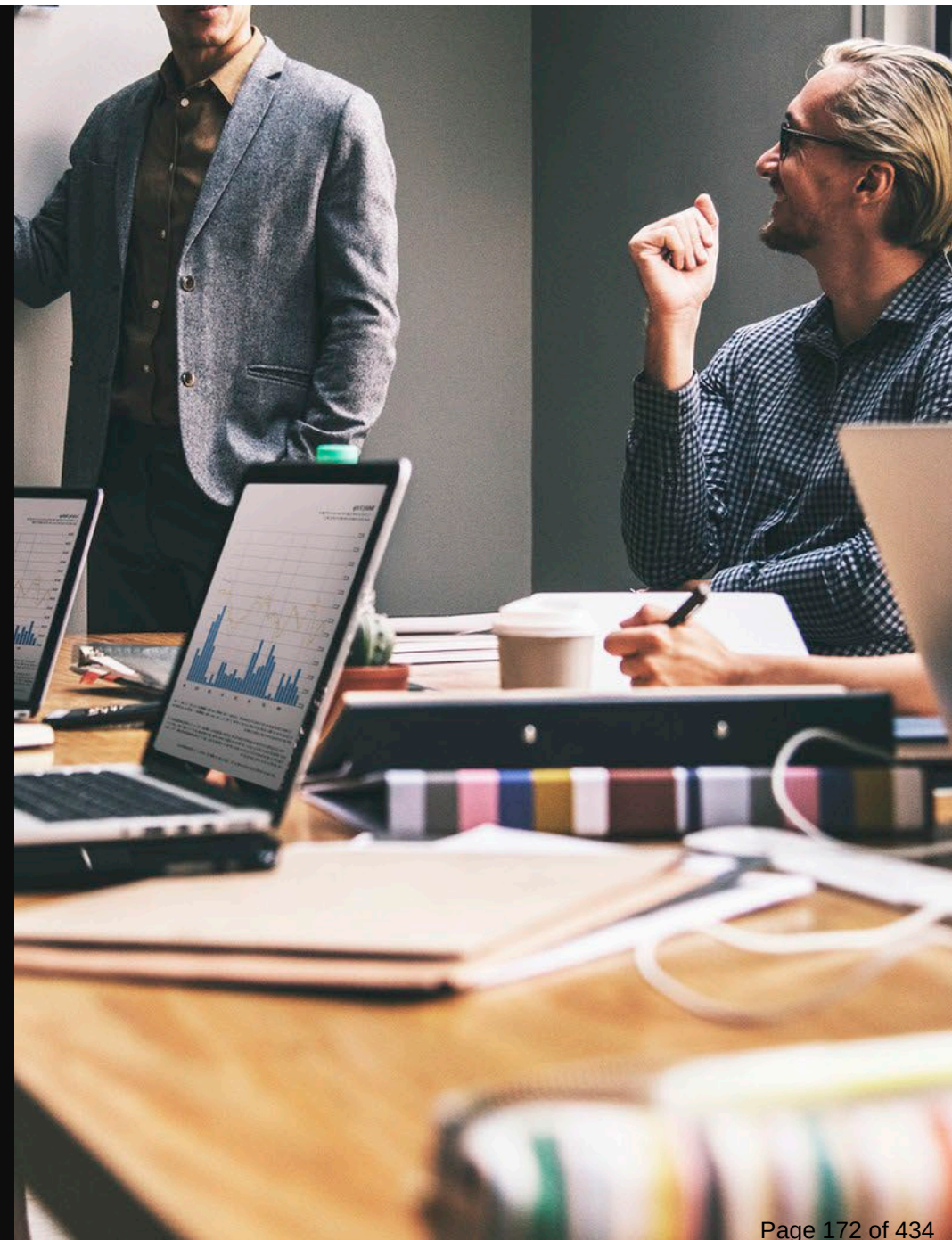
Timeline

CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
		Continuous Engagement		

Required Resourcing

 1 Business Analyst (continuous).

Plan Implementation



Introduction to Plan Implementation

This section details the investments, resourcing and timeline for the implementation of this plan.

Calendarized Investments

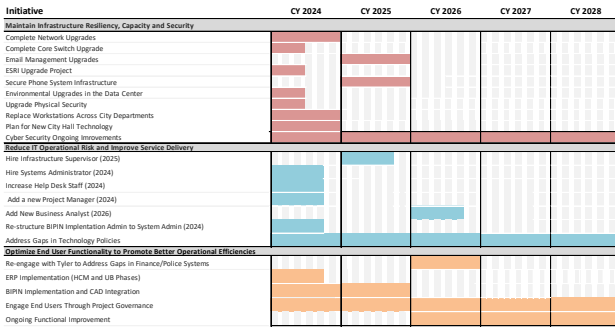
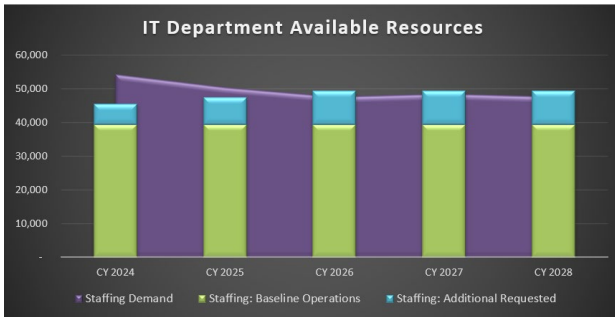
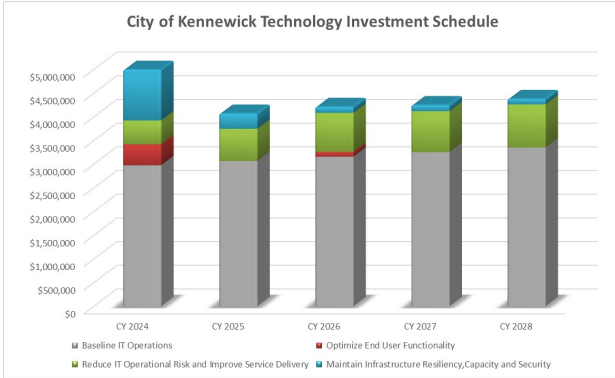
The calendarized investment schedule is shown in the diagram below. It contains the current baseline budget, grown year over year at a five percent increment for planning purposes. In addition, the investments shown for the Initiatives are shown grouped by associated Goal. A **Detailed Calendarization of Initiatives** is also provided.

Resource Utilization

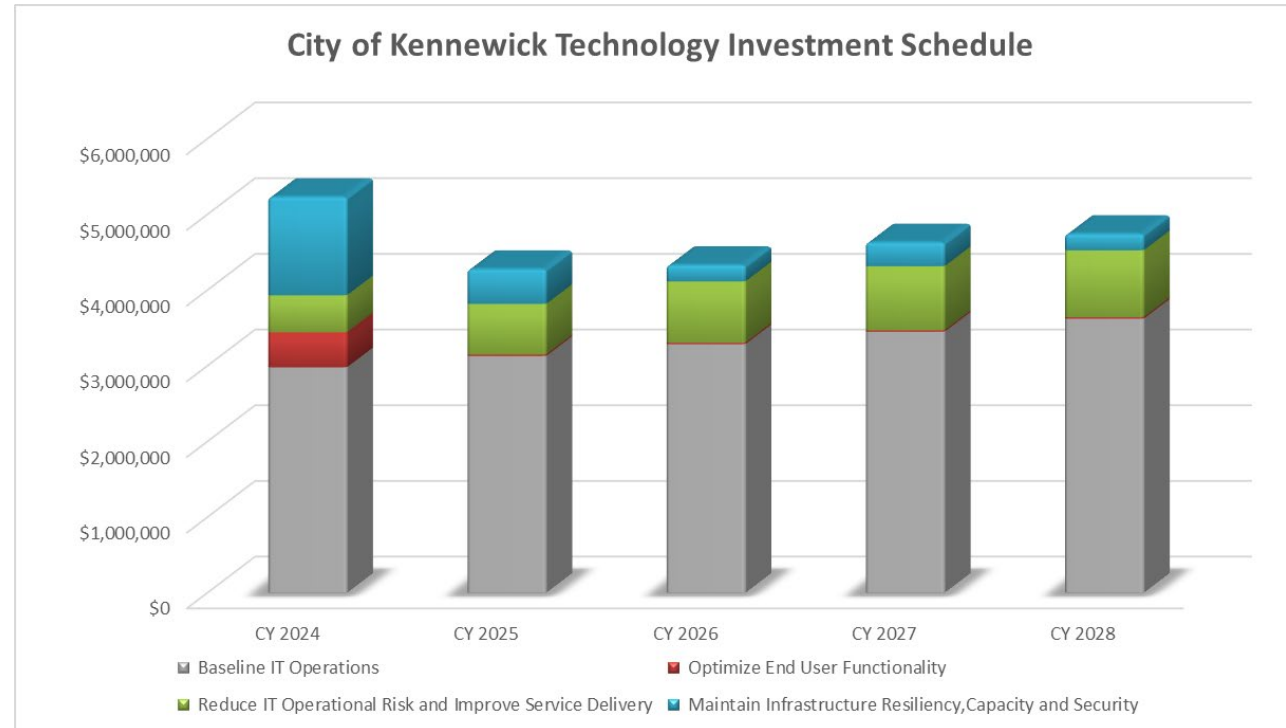
The IT Department’s available resource hours were evaluated against the demands of normal workload combined with that of the initiatives included in this Plan.

Recommended Implementation Schedule

The recommended implementation schedule for the goals and related initiatives in this Plan is presented in this GANTT chart.



Calendarized Investments

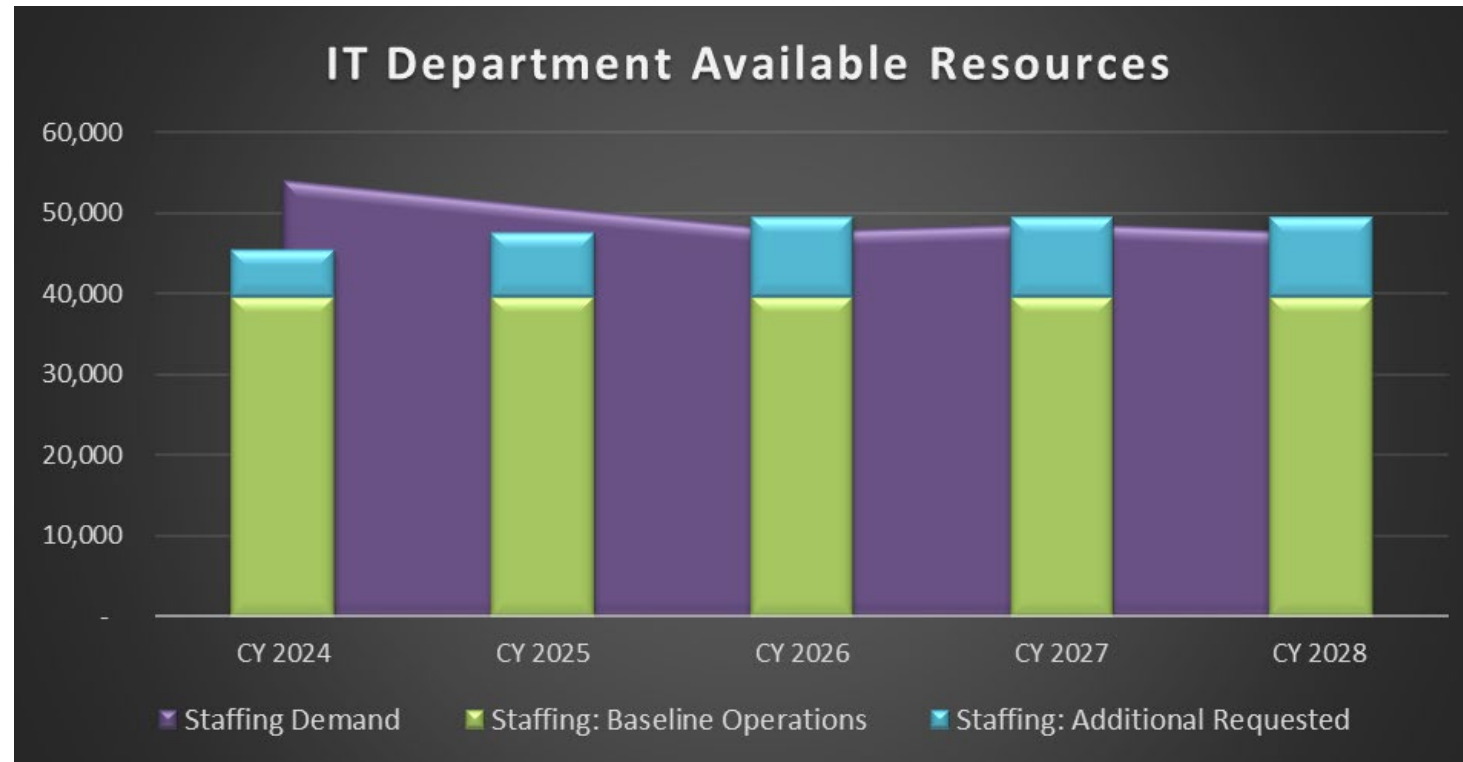


	Calendarized Investment					Total	Annual Average
	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028		
IT Plan Initiatives							
Maintain Infrastructure Resiliency, Capacity and Security	\$1,297,774	\$459,000	\$216,000	\$314,500	\$216,000	\$2,503,274	\$500,655
Reduce IT Operational Risk and Improve Service Delivery	\$489,252	\$668,668	\$809,351	\$846,069	\$884,622	\$3,697,962	\$739,592
Optimize End User Functionality	\$462,631	\$20,000	\$20,000	\$20,000	\$20,000	\$542,631	\$108,526
Initiatives Subtotal	\$2,249,657	\$1,147,668	\$1,045,351	\$1,180,569	\$1,120,622	\$6,743,867	\$1,348,773
Baseline IT Operations	\$2,978,348	\$3,127,266	\$3,283,629	\$3,447,811	\$3,620,201	\$16,457,255	\$3,291,451
TOTALS	\$5,228,005	\$4,274,934	\$4,328,980	\$4,628,379	\$4,740,823	\$23,201,122	\$4,640,224

Detailed Calendarization of Initiatives

#	Goal / Initiative	Project Start CY	Duration of Project (months)	One-Time Costs	Recurring Costs	CY 2024		CY 2025		CY 2026		CY 2027		CY 2028		5-Year TCO
						One-Time	Recurring	One-Time	Recurring	One-Time	Recurring	One-Time	Recurring	One-Time	Recurring	
	Maintain Infrastructure Resiliency, Capacity and Security															
A1	Complete Network Upgrades	CY 2024	12	\$ 58,496	\$ -	\$ 58,496	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 58,496
A2	Complete Core Switch Upgrade	CY 2024	6	\$ 314,512	\$ -	\$ 314,512	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 314,512
A3	Email Management Upgrades	CY 2025	12	\$ 80,000	\$ 144,000	\$ -	\$ -	\$ 80,000	\$ -	\$ -	\$ 48,000	\$ -	\$ 48,000	\$ -	\$ 48,000	\$ 224,000
A4	ESRI Upgrade Project	CY 2024	6	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000
A5	Replace Handsets to Complete Phone System Upgrade	CY 2025	12	\$ 112,500	\$ -	\$ -	\$ -	\$ 112,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 112,500
A6	Environmental Upgrades in the Data Center	CY 2024	6	\$ 60,000	\$ -	\$ 60,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 60,000
A7	Upgrade Physical Security	CY 2024	6	\$ -	\$ 250,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ 50,000	\$ 250,000
A8	Replace Workstations Across City Departments	CY 2024	12	\$ 764,766	\$ -	\$ 764,766	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 764,766
A9	Plan for New City Hall Technology	CY 2024	12	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
A10	Cyber Security Ongoing Improvements	CY 2024	Ongoing	\$ -	\$ 669,000	\$ -	\$ -	\$ -	\$ 216,500	\$ -	\$ 118,000	\$ -	\$ 216,500	\$ -	\$ 118,000	\$ 669,000
	Reduce IT Operational Risk and Improve Service Delivery															
B1	Hire Infrastructure Supervisor (2025)	CY 2025	9	\$ -	\$ 684,031	\$ -	\$ -	\$ -	\$ 158,703	\$ -	\$ 166,639	\$ -	\$ 174,970	\$ -	\$ 183,719	\$ 684,031
B2	Hire Systems Administrator (2024)	CY 2024	9	\$ -	\$ 721,786	\$ -	\$ 130,625	\$ -	\$ 137,156	\$ -	\$ 144,014	\$ -	\$ 151,215	\$ -	\$ 158,776	\$ 721,786
B3	Increase Help Desk Staff (2024)	CY 2024	9	\$ -	\$ 638,762	\$ -	\$ 115,600	\$ -	\$ 121,380	\$ -	\$ 127,449	\$ -	\$ 133,821	\$ -	\$ 140,512	\$ 638,762
B4	Add a new Project Manager (2024)	CY 2024	9	\$ -	\$ 928,455	\$ -	\$ 168,027	\$ -	\$ 176,428	\$ -	\$ 185,250	\$ -	\$ 194,512	\$ -	\$ 204,238	\$ 928,455
B5	Add New Business Analyst (2026)	CY 2026	9	\$ -	\$ 349,928	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 111,000	\$ -	\$ 116,550	\$ -	\$ 122,378	\$ 349,928
B6	Succession Planning	CY 2024	Ongoing	\$ -	\$ 375,000	\$ -	\$ 75,000	\$ -	\$ 75,000	\$ -	\$ 75,000	\$ -	\$ 75,000	\$ -	\$ 75,000	\$ 375,000
B7	Address Gaps in Technology Policies	CY 2024	Ongoing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Optimize End User Functionality to Promote Better Operational Efficiencies															
C1	Re-engage Tyler to Address Gaps in Finance/Permitting Systems	CY 2026	12	\$ 100,000	\$ -	\$ 20,000	\$ -	\$ 20,000	\$ -	\$ 20,000	\$ -	\$ 20,000	\$ -	\$ 20,000	\$ -	\$ 100,000
C2	ERP Implementation (HCM and UB Phases)	CY 2024	9	\$ 442,631	\$ -	\$ 442,631	\$ -	\$ -	\$ -	\$ 0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 442,631
C3	BIPIN Upgrade and CAD Integration	CY 2024	24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
C4	Engage End Users Through Project Governance	CY 2024	Ongoing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
C5	Ongoing Functional Improvement	CY 2026	Ongoing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	TOTAL			\$ 1,982,905	\$ 4,760,962	\$ 1,710,405	\$ 539,252	\$ 212,500	\$ 935,168	\$ 20,000	\$ 1,025,351	\$ 20,000	\$ 1,160,569	\$ 20,000	\$ 1,100,622	\$ 6,743,867

Resource Utilization



	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Hours Requirements					
Baseline Operations	44,000	44,000	44,000	44,000	44,000
Additional Staffing Requirements from Initiatives	10,296	6,420	3,600	4,550	3,500
Staffing Demand	54,296	50,420	47,600	48,550	47,500
Hours Availability					
Staffing: Baseline Operations	39,600	39,600	39,600	39,600	39,600
Staffing: Additional Requested	6,000	8,000	10,000	10,000	10,000
Staffing Availability	45,600	47,600	49,600	49,600	49,600

Recommended Implementation Schedule

Initiative	CY 2024	CY 2025	CY 2026	CY 2027	CY 2028
Maintain Infrastructure Resiliency, Capacity and Security					
Complete Network Upgrades	██████████	██████████	██████████	██████████	██████████
Complete Core Switch Upgrade	██████	██████████	██████████	██████████	██████████
Email Management Upgrades	██████	██████████	██████████	██████████	██████████
ESRI Upgrade Project	██████	██████████	██████████	██████████	██████████
Replace Handsets to Complete Phone System Upgrade	██████	██████████	██████████	██████████	██████████
Environmental Upgrades in the Data Center	██████	██████████	██████████	██████████	██████████
Upgrade Physical Security	██████	██████████	██████████	██████████	██████████
Replace Workstations Across City Departments	██████████	██████████	██████████	██████████	██████████
Plan for New City Hall Technology	██████████	██████████	██████████	██████████	██████████
Cyber Security Ongoing Improvements	██████████	██████████	██████████	██████████	██████████
Reduce IT Operational Risk and Improve Service Delivery					
Hire Infrastructure Supervisor (2025)	██████████	██████	██████████	██████████	██████████
Hire Systems Administrator (2024)	██████████	██████████	██████████	██████████	██████████
Increase Help Desk Staff (2024)	██████████	██████████	██████████	██████████	██████████
Add a new Project Manager (2024)	██████████	██████████	██████████	██████████	██████████
Add New Business Analyst (2026)	██████████	██████████	██████	██████████	██████████
Succession Planning	██████████	██████████	██████████	██████████	██████████
Address Gaps in Technology Policies	██████████	██████████	██████████	██████████	██████████
Optimize End User Functionality to Promote Better Operational Efficiencies					
Re-engage Tyler to Address Gaps in Finance/Permitting Systems	██████████	██████████	██████████	██████████	██████████
ERP Implementation (HCM and UB Phases)	██████████	██████████	██████████	██████████	██████████
BIPIN Upgrade and CAD Integration	██████████	██████████	██████████	██████████	██████████
Engage End Users Through Project Governance	██████████	██████████	██████████	██████████	██████████
Ongoing Functional Improvement	██████████	██████████	██████████	██████████	██████████





City of Kennewick

Appendices to Information Technology Master Plan

September 8, 2023

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Introduction to Strategy

Strategy Sets the Course

Strategy means many different things to people, but for our purpose, it’s a vision of a future outcome. The plan will include tactics, or steps, you will take to achieve that result. Organizational change starts with the business strategic plan: rethinking the business model and business processes.

From an IT perspective, it is important to align the IT strategy with the overall City business strategy to deliver true business value. In local government, the Plan should help IT’s customers accomplish their goals, and it should not get bogged down in too much “techie” detail. Simply identify the needed services and the value to your customers, and the steps needed to achieve them. Making the strategy too complicated can stop a plan cold in its tracks. Keep it simple and straightforward to make it easy for everyone to understand and support.

This section assesses the City’s current technology strategy, including the City environment and municipal operation supported by the IT Department and how the City has allocated its financial resources with regards to technology.



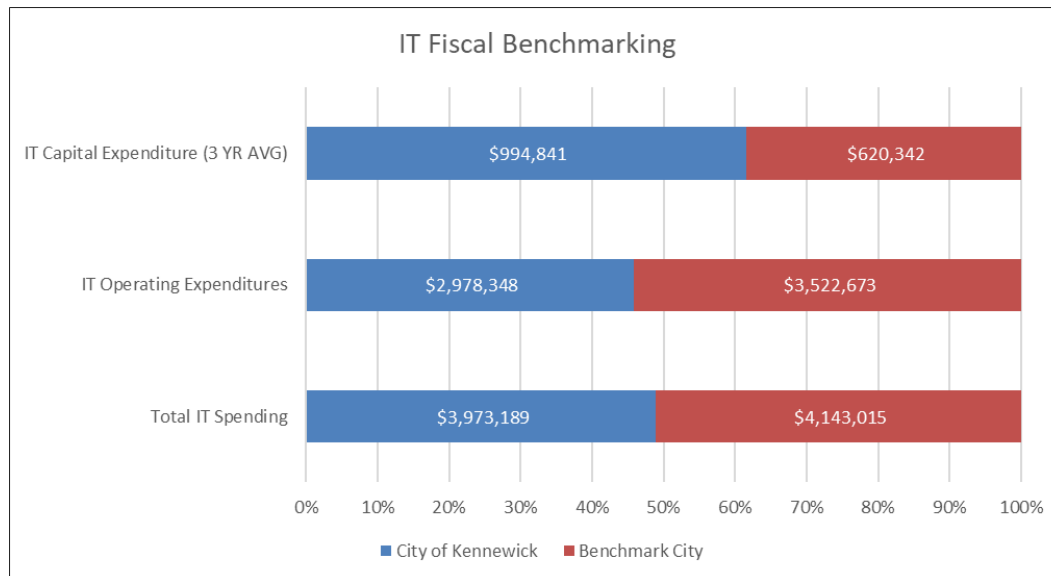
Fiscal Benchmarking

IT Operating Expenditure, IT Capital Expenditure, and Total IT Spending Relative to Industry Benchmarks

City's Total Revenue

- For the CY 2021-22 period, the City of Kennewick had a Total Revenue of \$138,347,727
- The City has 414 full-time employees with 465 active technology users
- To further understand both the size and complexity of the organization, the City's IT department has been compared to cities across the United States using industry specific benchmarks (i.e., Benchmark City)

Metric	City of Kennewick	Benchmark City
Employees	414	414
Users	465	465
Total Technology Spending as a % of Revenue	2.87%	2.99%
IT Capital Spending as a % of Total IT	25.04%	14.97%



City's Total Technology Spending

- For the most recent fiscal year, the City spent a total of \$3,973,189 or 2.87% of the City's total revenue on technology related expenses
 - This is slightly under the 2.99% benchmark allocation
- The City spent \$2,978,348 on technology related operating expenditures compared to \$3,522,673 spent by other similar sized cities.
 - Due to the complexity of the City & BIPIN infrastructure, the City's average annual IT capital expenditures as a percent of total IT spending were 10% higher than similar IT organizations

Fiscal Benchmarking

IT Operating Expenditure, IT Capital Expenditure, and Total IT Spending Relative to Industry Benchmarks

IT's Operating Expenditures Breakdown

- City-wide technology operational expenditures for the CY 2021-22 period totaled \$ \$2,978,348 which is \$544,325 lower than benchmark.
- Further analysis reveals the following:
 - Personnel costs are 19.23% higher than benchmark.
 - This is primarily attributable to approximately 20% higher cost of health and retirement benefits.
 - Business Applications costs are 7.35% lower than benchmark.
 - This is primarily attributable to the City's use of self hosting of the core applications rather than the use of Cloud based hosting.
 - Network Infrastructure costs are 1.10% higher than the benchmark.
 - This is primarily attributable to the operational support requirements of the highly resilient network architecture used by the City and BIPIN.

Metric	Benchmark City	City of Kennewick	Difference
IT Personnel	40.30%	59.53%	-19.23%
Business Applications	25.50%	18.15%	7.35%
Data Center Hardware/Software	9.80%	7.53%	2.27%
Energy/Utilities	1.10%	0.00%	1.10%
IT Facilities/ Floorspace	1.30%	0.19%	1.11%
Network Infrastructure	5.20%	6.30%	-1.10%
Security	4.80%	3.21%	1.59%
Voice/Data Carrier Expense	4.00%	3.28%	0.72%
PCs/Smartphones/Tablets	4.90%	1.13%	3.77%
Printers/Printing	1.90%	0.32%	1.58%
Other	1.20%	0.36%	0.84%
Total Operating	\$3,522,673	\$2,978,348	\$544,325

Strategic Alignment

City Management and IT Management Alignment in Expectations of IT and Strategy with a Focus on Customer Service, Leadership, Collaboration, and Efficiency

IT Strategic Vision

- While all IT organizations must be efficient in their operations, they must also be attentive to their customer’s issues and needs. However, the strategic vision must be the driver.
- The chosen strategy is also the IT Department’s external image to the other departments and how it interacts. For example, with an Efficiency/Cost Focus, all customer calls go into a central service desk are placed in a queue; no prioritization or special consideration is given. With a Customer Service Focus, customer contact is flagged for business analyst who has responsibility for interactions with that department, who understands the department’s technology and its direction and can prioritize the department request in the context of the business need.

The adjoining chart provides a correlation between the IT organizational strategy and the outcome of following each those objectives.

Organizational Strategy	Outcome
Customer Service	• Quality Support • End User Satisfaction
Efficiency	• Timeliness of Service • Cost Effectiveness • Resource Savings
Collaboration	• Planning with End Users • Technology Advisement • Project Management
Leadership	• Technology Enablement for City • Partner to City Management • Driver of Technology Decisions

Strategic Alignment

City Management and IT Management Alignment in Expectations of IT and Strategy with a Focus on Customer Service, Leadership, Collaboration, and Efficiency

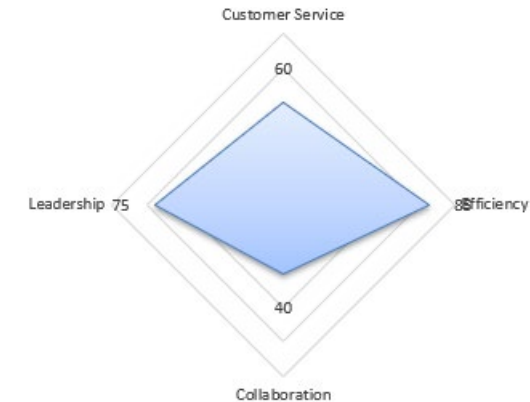
City Management's Viewpoint

- City Management was asked to respond to questions that asked about the strategic technology direction they see today, as well as questions about the current state of the IT Department
- As shown on the right, City Management's current view of IT compared to its desired view is relatively positive, but a few desired improvements are noted:
 - City Management would like IT to understand business processes and act as advisors to end users to help them optimize functionality.
 - The IT Department often does not engage in the selection and implementation of department-specific applications deployed and City Management would like IT to lead these efforts.

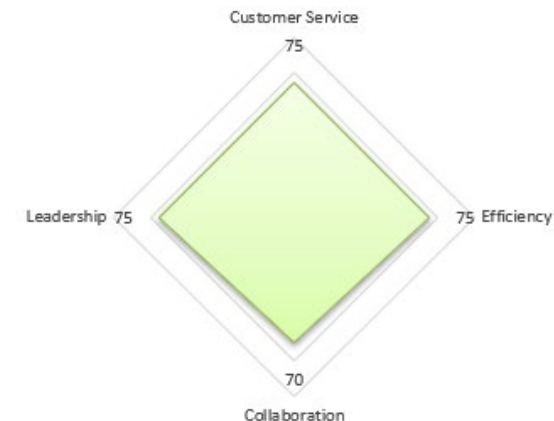
Long Term Vision

- City Management wants an approach that prioritizes improving Customer Service, Collaboration, and Efficiency where encouraging IT to collaborate more with end users on current technology initiatives.
- IT should become an enabler of technology within the City, always providing quality service, as well as providing leadership and support on department's technology projects.

City Management's Current View of IT



City Management's Desired View of IT



Strategic Alignment

City Management and IT Management Alignment in Expectations of IT and Strategy with a Focus on Customer Service, Leadership, Collaboration, and Efficiency

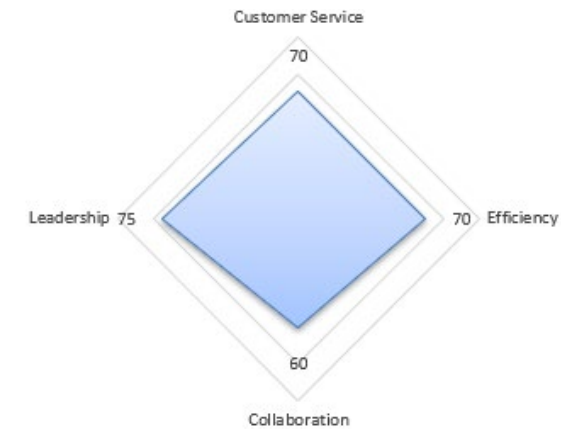
IT Management's Viewpoint

- IT Management was also asked to respond to questions that reflected the organization as they see it today, as well as questions about the direction they desire to achieve in the future
- IT Management's current view of the department is realistic with regards to Leadership and Efficiency compared with City Management; they feel like:
 - While strong on customer service and collaboration, there is room for improvement to making sure the problem is solved and the customer is informed and satisfied.
 - Departments need to involve them more on their software decisions.
 - They should be focusing more to ensure problems are solved in an effective manner and the customer is informed and satisfied throughout the process.
- Overall, IT and City Management are mostly aligned in their view on the current environment, and both expressed the need for better customer service and collaboration.

Aligning Both IT and City Management

- City Management and IT have similar desires for the future of the department; both would like to see IT become a leader in the City for technology decisions and project management.
- Both should work together to deliver this vision for the department.

IT Management's Current View of IT



IT Management's Desired View of IT



IT Strategic Thinking and Planning

IT Future Vision, Strategic Planning, Consultative Efforts with Operational Departments, Next Year Project List vs. Available Resources

This grouping of findings were compiled based on observations from City interviews and key management surveys.

IT Master Planning



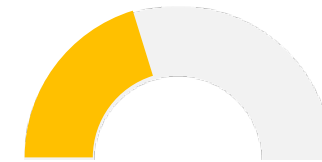
Detailed planning of major initiatives in next 1-5 years.

Future Technology Vision



Integrated applications have been deployed; further integration required.

Collaboration with Other Departments



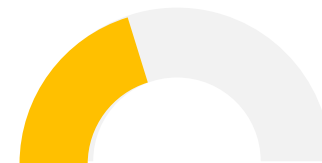
Some collaboration with other departments on technology projects, but more focused on infrastructure rather than application integration.

Technology Project Involvement



Some involvement with department projects, no dedicated business analysis function, department leads projects without efficient processes.

IT Available Resources for Future Projects



Little to no available resources to assist departments with current and future technology projects, due to ongoing BIPIN and Munis implementation.

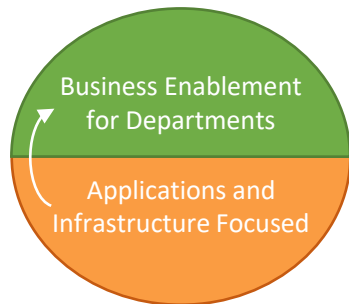
IT Enthusiasm to Grow



IT expressed enthusiasm to transform their organization from a reactive to proactive department

City's Technology Direction

City Management Vision for Future Technologies Including Citizen Demands and Delivering Analytics and Reporting



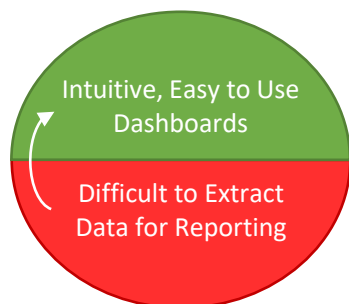
The Role of Technology in the City

- City Management's focus is on core applications and infrastructure.



Ability to Meet Citizen Demands for Services

- City Management expressed that while primary Citizen demands are met, at times the process of meeting those demands require some workarounds and manual intervention due to some systems not being configured or optimized to department needs.
 - The City selected Tyler Munis to address these shortcomings. Once complete many of the existing workflow limitations are expected to be reduced.



Ability to Deliver Analytics & Reporting

- City Management does not always have the information they need to make proactive decisions and the process of data extraction can be time consuming.
 - The City selected Tyler Munis to address these shortcomings. Once complete, many of analytical and data presentation limitations are expected to be reduced.
 - Propose project to reengage Munis for report building.

Things to Consider

Fiscal Benchmarking

- Capital expenditures are 10% higher compared to similar sized cities, this is due to the construction and maintenance of a robust and reliable network infrastructure for the City and BIPIN organization.
- Although capital expenditures are above average compared to benchmark metrics, IT operating expenses are lower and should be increased to the benchmark with additional funds applied to IT staffing.

Strategic Alignment

- City and IT Management share the same vision with regards to the IT Department's direction and focus. Namely to maintain a stable infrastructure while facilitating end-user's ability to maximize the use of the application systems. The IT Department's inability to fully execute on this vision is constrained by limited IT staff and the workload caused by the deployment of the new integrated application systems.

City's Technology Direction

- Focus on business enablement for the end user departments; find solutions for efficient business processes, workflow automation, and user-configurable reporting.

IT Strategic Thinking and Planning

- Begin strategizing internally on how to move forward; continue building up a solid organization and focus on working with operational departments to become an enabler of technology for the City.

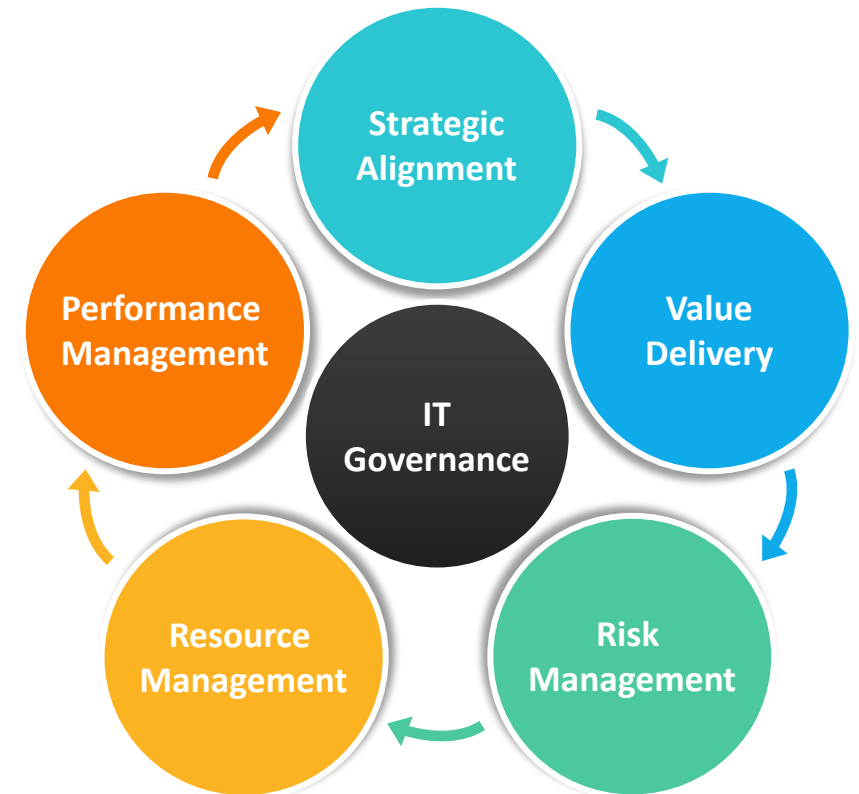
Value to Governance or Commitment to Governance

Governance Enables Smarter Decision-Making

In many government agencies, departments will approach IT individually to request support on special projects. This practice requires the IT manager to become the gatekeeper, juggling far too many projects for a limited pool of resources, and peacemaker when projects aren't completed on time. Because each department lacks awareness of the broad range of IT projects, they become frustrated when their projects are not completed in what they consider sufficient time.

An IT Steering Committee removes pressure from IT managers to determine IT priorities. Comprised of senior managers – including both externally-facing departments such as Planning, Public Works, Parks, Police and Fire, and internally-facing departments such as Human Resources and Finance – a Technology Governance Committee can make smarter, well-informed decisions which considers the big picture and sets IT priorities as they relate to business priorities. This Committee has the citywide perspective to evaluate the risk and business value of proposed IT projects, to set the direction for IT, and to ensure that IT investments are aligned with the overall strategy.

This section assesses the City's current governance process to ensure that the City receives the maximum value from its technology investments.

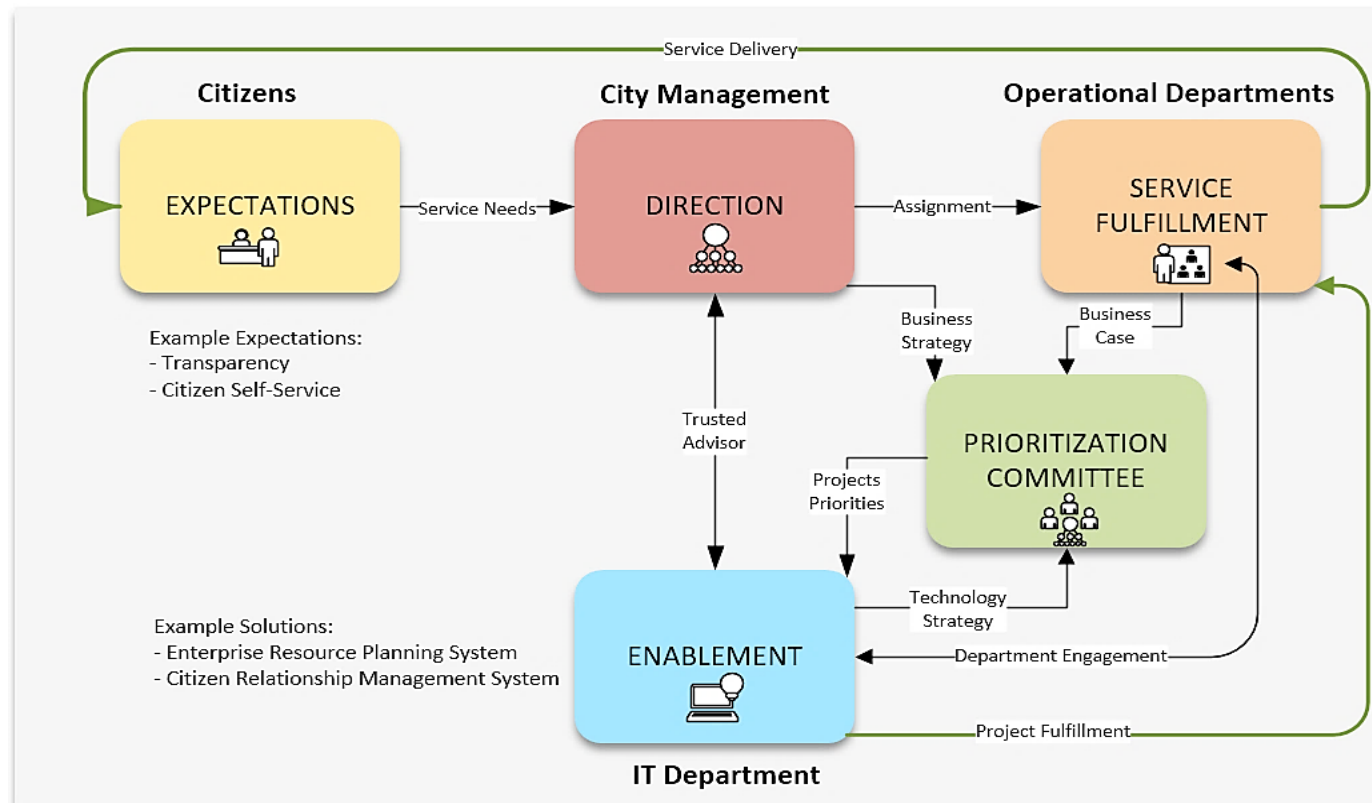


Relationship Governance

Communication Throughout the City, Current Governance Process, Business Strategy vs. Technology Strategy, IT's Role within Governance

What is Governance?

Governance is defined as the level of communication, collaboration and engagement between IT and the operational departments both when making important decisions and on an ongoing basis. It ensures good communication, leading to successful projects that are both implementable and manageable. Strong relationships between City Management, operational departments, and IT result in smart, sustainable technology decisions.



The Ideal Governance Structure

It's important that the governance process aligns with the intentions of management. City Management often derives its objectives from multiple sources throughout the City. Community outreach, social media, and community boards are used to make citizens aware of City developments. As more citizen data is collected, City Management identifies trends and common themes found throughout the community. City Management takes these common themes and derives City objectives, possible projects the City can pursue to meet citizen expectations.

Relationship Governance

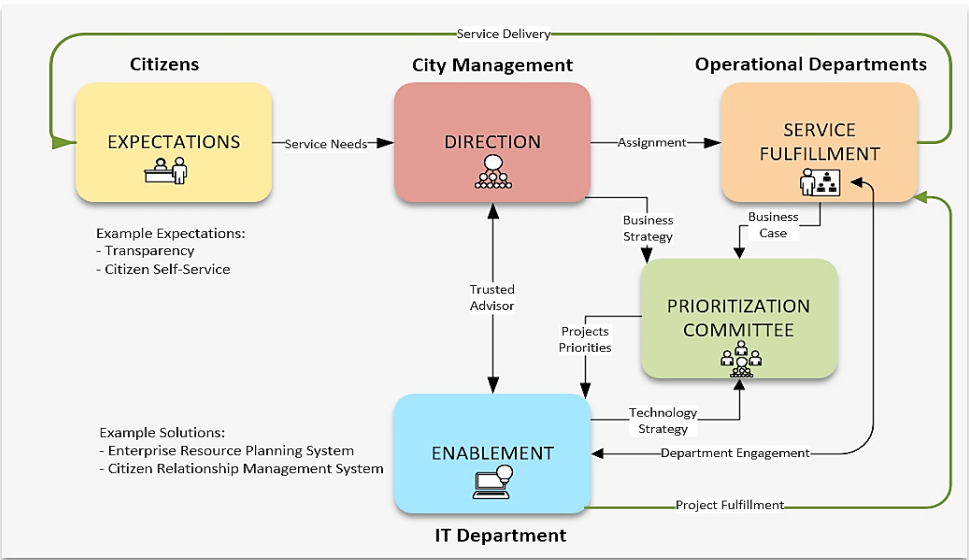
Communication Throughout the City, Current Governance Process, Business Strategy vs. Technology Strategy, IT's Role within Governance

The Ideal Governance Structure (cont.)

While this is occurring, City Management is also deriving objectives from department feedback. City Management allows departments to explain the service demands upon them, and to present objectives that should be adopted to support them. Because many departments interact with citizens on a more frequent basis, City Management expects these objectives to lead to improving citizen service. City Management then assigns potential projects to each of the operational departments during the yearly budget process. Operational departments develop and submit a business case to the IT Steering Committee, who analyzes it for feasibility and prioritizes each objective for IT. City Management's role is to assist the committee with the overall business strategy while IT assists with the technology strategy.

During this process, IT should be involved in helping to advise management on the technology impacts of the project initiatives, and the Committee will provide IT with the project priorities. IT should be thought of as a trusted advisor, where key decision makers lean on them for guidance.

In addition to being a trusted advisor, IT also needs to have strategic alignment with City Management on major priorities, projects, and initiatives. This enables higher performance by optimizing the contributions of people, processes, and inputs to the realization of measurable objectives. Building transparency, trust and technology awareness throughout the organization enables the City to make better and informed decisions regarding their technology initiatives and investments.



Relationship Governance

Communication Throughout the City, Current Governance Process, Business Strategy vs. Technology Strategy, IT's Role within Governance

The IT Steering Committee

The IT Steering Committee is responsible for all major IT decision-making for the City and provides guidance as well as sets IT priorities to enable the City to balance its technology goals with available resources in alignment with the City's strategic goals and citizen needs. It is important to keep in mind when forming this Committee who will be the most effective selecting and prioritizing technology projects analyzing the impact towards the City's infrastructure and system integration.

Some of the Committee's main responsibilities are:

- Establish business goals and strategies for IT governance
- Oversee and approve technology policies and procedures
- Define how the enterprise should design and implement IT investment decision-making and oversight processes, including the role of committees and their members
- Track investments, oversee funding and chargeback policies, and define the measures of success for approved projects

Key Stakeholders

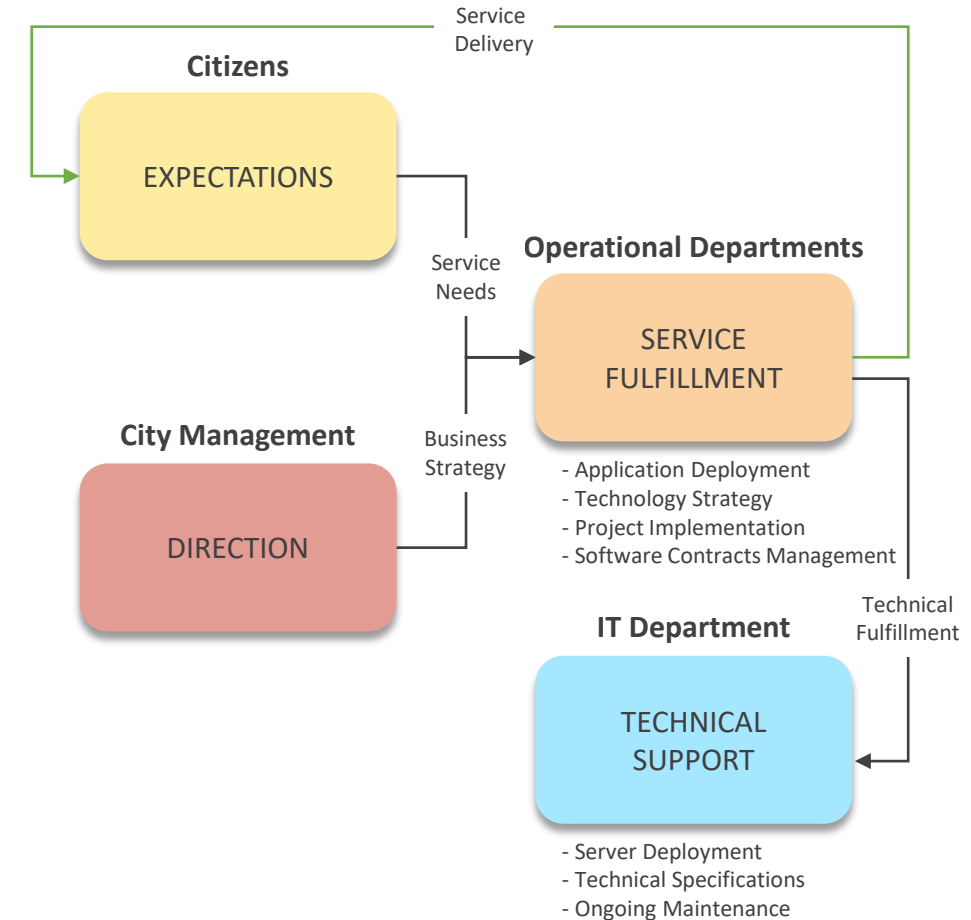
 City Management	- Represent the business strategy - Ensure project is within budget - Assist with approving/disapproving potential projects
 Operational Departments	- Present business case to Committee - Outline costs associated with project - Identify resources needed for implementation
 IT Business Analyst	- Advise on the technology strategy to ensure an integrated environment - Present associated risks with project - Identify technical resource availability and assist with prioritizing potential projects

Relationship Governance

Communication Throughout the City, Current Governance Process, Business Strategy vs. Technology Strategy, ITs Role within Governance

City's Current Governance Process

- The current technology procurement process occurs mostly within the operational departments themselves; IT is often not involved in departmental application decisions. IT is involved in strategic applications such as ERP.
- Each department runs as if they are their own entity and therefore make technology decisions on their own; resulting in a disjointed applications architecture that can be complex and difficult to manage.
- Because of this lack of governance, department's have been procuring mostly single functionality systems with little dataflow integration between them.
- City Management has admitted that the current process is not ideal leading departments to make less than optimal long-term decisions; while this model can be effective for the individual department's needs, it also creates an environment that is difficult to consolidate data and produce reports for upper City Management.
- The City currently has an IT Steering Committee to handle project prioritization during budget development. However, it has not been consistently used to evaluate technology requests that arise outside of the budget process.



Customer Engagement

IT Level of Engagement with Other Departments Regarding New Technology Projects, Implementation of Technology, and Support of Applications

Prioritization of New Systems

- IT does not often engage with the operational departments on new technology initiatives (e.g., applications, buildout of new buildings).
 - In some measure is due to a lack of business analysis function within IT.
 - Results in a poorly planned applications strategy, rework and/or higher costs to fully implement.

Implementation of New Systems

- For major applications, IT will support the implementation on the technical side with their software support division.
- The departments are responsible for implementing their own systems with the vendor; IT's managing the data conversion, interfaces and server setup.
 - This is not necessarily a negative; however operational departments could benefit from a business analyst to assist in project management and business process configuration with the vendor.

Support of Existing Systems

- IT has a group of 6 software support staff to handle existing maintenance and support; end users while mostly satisfied, expressed they would like more expertise and service regarding increased efficiency and understanding business process configurations when implementing systems with the vendor.



Prioritization of New Projects



Implementation of New Systems



IT Projects Support

Policies

List of Current Policies, Depth of Detail and Accuracy, Enforcement and Review

Policy Name	Up-to-Date?
Mobile Device Acceptable Use (City Staff)	Existing policy
Internet Acceptable Use (City Staff)	No current
Email Acceptable Use (City Staff)	Existing policy
BYOD Acceptable Use (City Staff)	No current
Purchasing (IT)	No current
Backup (IT)	No current
Patch Management (IT)	No current
Systems Maintenance (IT)	No current
Information Security (IT)	No current
Computer Software (IT)	No current
Change Management (IT)	No current
IT Standards (IT)	No current
IT Support (IT)	No current
Physical Access (IT)	No current

City's Current Technology Policies

- IT policies are a mix of both internally-focused and externally focused guidelines to assist the IT Department in managing the operations and allowing users to self-manage their behavior with regards to technology.
- Policies were developed by IT with input from departments and approved by City Management.

- Many IT policies are antiquated and not written to NIST-CSF standards and categories. Additional policies that would align to NIST-CSF have not been written due to the limited resources in IT being allocated to other projects to NIST-CSF standard and categories. Additional policies that would align to NIST-CSF have not been written due to the limited resources in IT being allocated to other projects.
- All policies need to be reviewed and updated by IT Management to ensure documentation and processes are up-to-date And where possible work to systemically enforce.
- Policies are known by and agreed to by staff, monitored by IT, and enforced by management. And identify cradle to grave requirements, exceptions, and approval processes where applicable. Example: City Cell Phone Policy from purchasing to decommission, exceptions such as BYOD if allowed or not, approval process to add new phone, use expectations, texting expectation, record expectations, budget approval request expectations, MDM tracking, as well as off boarding processes such as decommissioning.
- Given the long-term service that many employees will experience, refresher communications regarding the City's expectations of staff regarding their computers and other technologies is recommended.
- An IT documentation tool should be procured to record procedures that implement the policies; currently IT documentation is a mix of OneNote pages, Word documents, flowcharts, network diagrams, spreadsheets, configuration files.

Things to Consider

Relationship Governance

- Continue meeting on a regular basis (e.g., quarterly) to discuss business priorities and potential initiatives; perform due diligence when selecting applications and assess whether multiple departments can benefit from a single or integrated solution.
 - Example: If Public Works is implementing a new work order system, consider if other departments (e.g., Fleet, Facilities, Parks) can benefit utilizing the same system.
- IT should become more involved in helping determine department needs.
- It is important to keep IT in the loop concerning application purchases, even if they are cloud-based as these investments affect the entire City's environment.
- Require all IT projects to be reviewed by the Steering Committee and those that arise after budget adoption are ranked against all approved projects to evaluate which are the top priority to assign resources to.

Customer Engagement

- IT should become more involved earlier in the process of selecting new systems and other technology projects with operational departments.
- IT needs to become a trusted advisor for the City:
 - Provide technology guidance to the City's departments, working with them to ensure the City is making the best technology purchasing decisions possible, not only in terms of technical capability, but also to better serve the needs of the department.
 - Be a technology enabler within the City, providing advisement, as well as providing project management support on larger technology investments.
- Focus on performing more efficient work by following projects through to completion, instead of attempting to meet all customer service demands at the expense of its objectives.

Policies

- Review and update its current policies and at a minimum, add new policies identified previously.

Introduction to Architecture

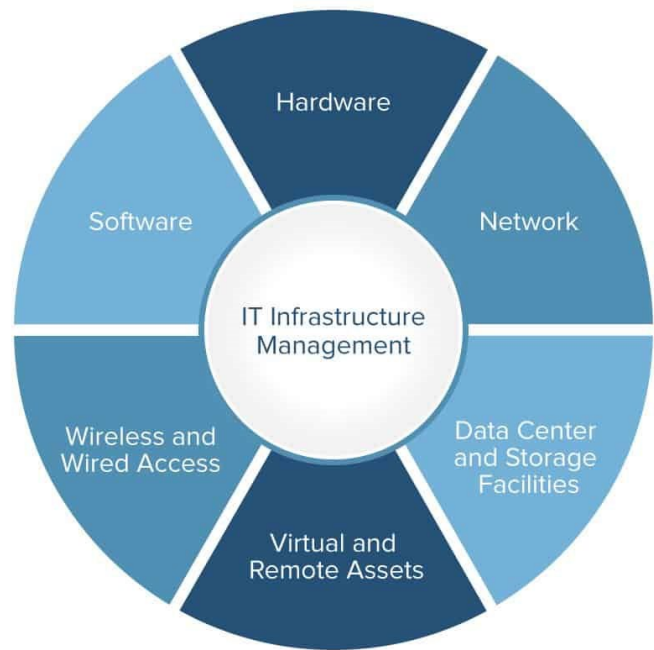
Architecture Saves Money

Technology is everywhere these days, and it does not have to be complicated or the “latest and greatest” to be effective for your organization. In many cases, tried and true systems are the wiser choice for local governments.

Adopting technology standards can make the delivery of effective technologies easier to deploy and maintain. Simple and easy translates into cost savings for a few reasons. First, the equipment is typically widely available and priced lower. Second, these technologies have probably been available for some time, which means that they have been used and improved to the point where the bugs have been worked out and they are more reliable. Third, it doesn’t require specialized (i.e., expensive) consultants to deploy, support and troubleshoot. Keeping the technology architecture simple keeps more money in your budget for other services that directly benefit the community.

Standardizing platforms and applications will also drive down costs and improve the simplicity of managing the architecture. Reduce the number of vendors involved IT, and the internal IT team will be able to support standard systems without ongoing specialized training or extra support.

Focus on infrastructure management technology that supports and integrates with key processes, making those processes more efficient. Not only does it save staff time, but you’ll be purchasing fewer applications to support more functions.



Servers, Storage and Backup

Server Environment, Server Hardware, Storage Environment, Backup Procedure, Backup Monitoring, Hardware Replacement Cycle

Servers

Assessed Area	Findings	Observations	
Server Environment	VM: Virtualized server environment.	Server virtualization is the process of creating multiple server instances from one physical server. Each server instance represents an isolated virtual environment. Within each virtual environment, you can run a separate operating system. One drawback to this type of environment is that each component is separated from the rest (compared to hyperconverged) and is more costly to maintain. That said, this environment is more reliable than other server designs.	●
# of Physical Servers	12	Number of physical servers is a bit below average for the size of the City.	●
Physical Servers Hardware and Age	Dell; servers on average 2-4 years old.	Older servers should be replaced with new hardware to have a more cohesive, standardized server environment/ Once servers are, nearing end of support (either O/S or hardware support) they should be decommissioned and replaced. This is to prevent server failure and loss of City data.	●
Form Factor	Blades Servers in data center.	The “blade” form factor has been the standard for IT organization in municipalities.	●
# of Virtual Servers	Total: 146 City of Kennewick (SCADA included) – 100 servers BIPIN – 46 servers	This equates to a 146:12 or 12.2:1 virtual to physical server ratio which is not standard. Keep this ratio below 10:1. As systems are evaluated for standard replacement cycles evaluate capacity and fail over capability and mitigate platform configurations that would impact recovery. Include in budget process changes needed for infrastructure adjustments	●
Virtualization Environment	VMWare vSphere	VMware is one of the most widely used virtualized applications for modern server architecture.	●
Enough Server Capacity to Satisfy Today’s Business Needs by the Departments?	Yes, could add storage in the future as needed.	Ensure the vendor’s software will work on the City’s existing server platform. If not, new servers might need to be deployed for any major system installation.	●

Servers, Storage and Backup

Server Environment, Server Hardware, Storage Environment, Backup Procedure, Backup Monitoring, Hardware Replacement Cycle

Storage and Backup

Assessed Area	Findings	Observations	
Storage Environment	A hybrid storage environment consisting of a main storage area network (SAN) and multiple network-attached storage devices (NAS's) and distributed over multiple locations and act as back to each other.	The storage environment does consist of multiple different types of storage platforms, they are physically isolated from each other. This means that if the data center was to experience a catastrophic event, all the storage and data in the City is redundant and safe from potentially being lost. Moving forward, the storage of City data needs to be continued to be backed up to a secondary location to further safeguard the City's data.	●
Total Storage Capacity	60 TB – City, 8 TB for SCADA 36 TB – BIPIN	Storage capacity can handle workload based on the number of applications the City has deployed with the total backup at 90 TB currently.	●
Total Backup Size and Growth	40 TB (compressed) – City, 3 TB for SCADA 30 TB (compressed) – BIPIN	At the current rate of backup growth, the City will need to increase their overall storage capacity over the next 5 years. Ensure that storage devices are replaced in a timely fashion. Continue proactive capacity planning each year and look for opportunity to archive/purge data against retention requirements where possible.	●
Type of Backup	NAS Disk	Disk-based backups are what are usually used in modern backup solutions. The major benefits to disk backup: • Quick backups and restores • Easy mobility of data • Secure backups • Efficient medium for daily and weekly backups	●
Backup All City Files?	Yes, all City files are backed up.	Backing up of all City data and files is critical to ensuring continuity in the event of a disaster. Research to see what type of data is stored on the NAS and find a solution to back it up on a recurring basis.	●

Servers, Storage and Backup

Server Environment, Server Hardware, Storage Environment, Backup Procedure, Backup Monitoring, Hardware Replacement Cycle

Storage and Backup

Assessed Area	Findings	Observations	
Current Version of Backup Software	Running most current version (Veeam).	Important to stay up-to-date on software versions.	●
Backup Policy	No back up policy.	Policies and documentation for these processes are important to develop and keep up-to-date to ensure staff are accountable.	●
Backup Testing	Tested once a month.	Backup testing are critical to implement and develop in order to ensure data is safe in the event of a disaster.	●
Time Required to Restore Systems	Estimated time required to restore systems is one week, but with Veeam replicas this is cut down to four hours.	IT has developed a backup plan in the event of a system outage. It is critical to regularly test backup systems and document procedures for when system loss occurs. This will enable the department to be better prepared for a system failure causing event.	●
Hardware Replacement Cycle	None, no written policy.	When hardware replacement cycles are not in place, there is more likelihood for hardware to go past their end-of-life expectancy. IT should implement a Hardware Replacement Cycle for all devices. Network equipment every 7 years and servers every 5-6 years. Computers & laptops every 5 years.	●

Data Center

Data Center Environment to Include Hardware, Security, Access, Disaster Recoverability, and Power

City Hall and Franklin PUD COLO Data Centers

Assessed Area	Findings	Observations	
# of Data Centers and Equipment Rooms	2 data centers (City Hall, FPUD COLO) 36 equipment rooms	The City has a data center located in City Hall that houses all the applications, systems and data for the entire organization. The City also has deployed a secondary backup data center to replicate with the main data center to mitigate this core risk in case of a catastrophic event.	●
Raised Flooring	No	Raised flooring creates a space that can be used for cooling, electrical, and mechanical services. In data centers, raised floors are also used as a way of distributing cold air. By using a raised floor, facilities not only reduce the amount of air needed to cool equipment, but they also use less energy and improve temperature distribution across all of the cabinets.	●
Fire Suppression	No	Fire suppression includes both wet (sprinklers) and dry (gas). For data centers, it is recommended to deploy a dry, chemical fire suppression system to avert the risk of causing damage to the servers. The City should consider implementing a fire suppression system in the data center as this presents a high risk.	●
Adequate Cooling	Needs improvement	It is important to ensure the data center has adequate cooling to prevent overheating of the servers. Continue regular maintenance with HVAC vendor and actively monitor aged second unit.	●
Power Protection	Diesel generator and UPS: generators are tested weekly while UPS run self-diagnostics once a week and report any bad batteries.	Power infrastructure upkeep is essential to reduce damage in an unplanned outage. The data center has sufficient generator power for outages. UPS devices can be added in order to ensure protection from critical loads from power problems.	●

Data Center

Data Center Environment to Include Hardware, Security, Access, Disaster Recoverability, and Power

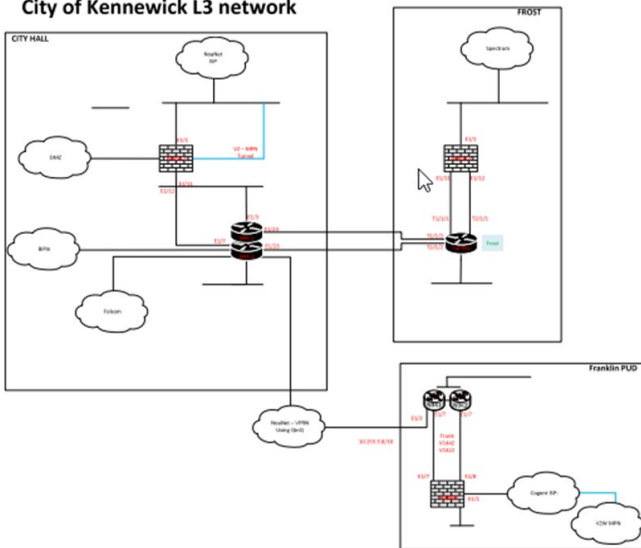
City Hall and Franklin PUD COLO Data Centers

Assessed Area	Findings	Observations	
Physical Security of Data Centers	Full physical security is implemented at each of the main data centers to include access control, camera monitoring, lockable cabinets, keycard entry.	Physical security access is critical to ensuring the security of the City's data. While door access is an important first step, Continue access practices (visitor escort, etc.) and consider implementing the following to further secure the environment visitor logs.	●
Physical Security of Servers	City Hall: Servers are not housed in lockable storage, but access is limited to IT staff only. FPUD COLO: Yes	Servers are not housed in lockable storage to prevent tampering at main Data Center.	●
Camera System Monitoring	Cameras installed at the two main data centers.	Camera system is essential to monitor who is accessing the data centers and hold accountability to staff.	●
Data Center Hardware Replacement Cycle	Yes, equipment last replaced 2-4 years ago (2019).	Replacement cycle/fund is beneficial for budget forecasting.	●
Disaster Recovery			
Secondary Data Center for DR	Backups of all City data and systems are actively synced to the FPUD COLO data center and can be spun up quickly if City Hall goes down.	Ensure that the network between these two data centers is stable to provide better redundancy. Continue to sync critical data/applications between both data centers and continue active monitoring processes. Continue to research migration options to hosted distributed Data Centers and continue to explore budgeting avenues.	●

Network

Network Environment to Include Hardware, Design, Wireless, Firewalls, Access Points, and Security

Main City Network

Assessed Area	Findings	Observations
Network Environment	City-owned fiber connecting the main buildings. Fiber was designed in a star-topology method with City Hall as the core (e.g., single hub with multiple nodes linked to it). City of Kennewick L3 network  The diagram illustrates the City of Kennewick L3 network topology. It shows three main locations: City Hall, Frost, and Franklin PUD. City Hall is the central hub, connected to Frost and Franklin PUD via fiber. Frost is connected to City Hall via a 100 Mbps link. Franklin PUD is connected to City Hall via a 100 Mbps link. The diagram also shows various network devices like routers, switches, and firewalls, along with external connections to the Internet and other networks.	The City’s Network is a highly complex distributed environment which includes three Core locations. The connectivity between sites is accomplished via BPUD\ NOANET leased and Agency owned circuits. Most external City sites connect to this environment via BPUD leased fiber with a few close proximity buildings being connected by Agency owned fiber. The Franklin PUD site has been developed as the City’s secondary Data Center. It houses the City’s replicated Application Hosting infrastructure designed to mitigate service related outages and to preserve business continuity for the City. An additional ISP (Internet Services Provider) has been established at the secondary Data Center to provide redundancy in the event of a failure with the City’s primary ISP. This also provides the required connectivity in the event that Public facing services need to be supported from the secondary Data Center. The City’s data protection environment is housed at the Franklin PUD location with data being transferred via the point to point VPRN (virtual private routed network) circuit between City Hall and Franklin PUD. City IT continue efforts to increase redundancy and develop failover capabilities regarding this environment and the City provided services it supports.

Network

Network Environment to Include Hardware, Design, Wireless, Firewalls, Access Points, and Security

Main City Network

Assessed Area	Findings	Observations	
Network Switches and Routers	Switches • Cisco • Cisco Nexus 9Ks • Cisco Catalyst • 2 Cisco Meraki Routers • 9 Cisco routers	The City's network uses one provider for switches and routers. It simplifies the complexity of the environment and makes it sustainable for future growth. Network devices are actively tracked and are scheduled for replacement in 2023/2024. Continue deploying Cisco switches and routers to provide a single solution for all network hardware and maintenance.	●
Underlying Cabling	Each building is running different standards (based on age of building) This ranges from 5e to 6a. In addition, not all buildings are connected via city-owned fiber and rely on 3 rd party provider.	Optical fiber offers tremendous bandwidth and transmission speed capabilities compared to traditional ethernet cabling. The City should continue to deploy fiber to its core sites.	●

Network

Network Environment to Include Hardware, Design, Wireless, Firewalls, Access Points, and Security

Main City Network

Assessed Area	Findings	Observations	
Internet Provider & Points of Presence (POP)	The City has 2 internet POPs, one located at City Hall (NoaNet), and one located at the Frost building (Spectrum).	A POP is the local access point for an Internet service provider (ISP). It is the main connection from the outside that allows the City to access the internet. The two POPs IT deployed provide redundancy and reliability if connection goes down. The two POPs are both located in different locations which provide service to the majority of the City's staff. The City is currently working to implement a third ISP connection at their backup data center - Franklin PUD (NoaNet).	●
Network Security	Much of the City's network traffic is segregated between fiber strands (i.e., SCADA, Traffic, Voice, and City Data). This creates a secure environment to the City's overall network and water control.	When these different types of data are not segregated, the network is more vulnerable to penetration due to the number of access points. The largest risk is to the SCADA network as threats can come from the City internal network. The City should continue to segregate the fiber strands in the network to increase security and capacity.	●
Network Hardware Replacement Cycle	None, but hardware has been replaced over time.	A replacement cycle would be beneficial for asset tracking and budget forecasting.	●

Network and System Management

Network Traffic, Network and Systems Monitoring Software, Network Reporting, New User and Workstation Setup, Remote Access

Network and System Management Tools

Assessed Area	Findings	Observations	
Network Traffic Monitoring	Network and System Monitoring is done with various tools and a 3 rd party company, SolarWinds Orion is a set of monitoring and discovery tools that the city developed internally. Artic Wolf is a cloud based managed Detection and Response (MDR) utilized to provide 34/7/365 monitoring.	Network Traffic should be closely monitored, and alerts set up in case of intrusion. This software allows IT to actively monitor, manage, and resolve issues with the City's system.	●
Network and System Management Software	Microsoft System Center Configuration Manager (SCCM) is used to install, upgrade, and remove operating systems, applications and scripting. SolarWinds Network Performance Monitor(NPM) is used for network management. It is mainly used for detecting outages.	SolarWinds is a comprehensive management tool that allows the City to actively monitor, manage, and resolve issues with the City's systems.	●
Remote Server Management	The system can be managed from outside the office, which allows for nighttime monitoring and management.	This is an important feature of the system, and staff need to remain available/ on-call to handle any server issues.	●
New Users/ Workstations	It takes about 8 hours to add a new user to the network and about 1-2 days to install a new workstation to the network.	New User: IT should strive to improve this service. New Workstation: 1 day or less is a good metric to continue.	●
IT Staff – Network Monitoring	Currently the IT Department actively monitors the City's network and systems.	IT is actively monitoring and reporting the network and City's systems. Applications are effectively being utilized to analyze the core systems and measures have been put in place to secure the environment.	●

End User Computers

Total # of Workstations, Desktop/Laptop Hardware, Desktop Operating System, Business Application Environment, Hardware Replacement Cycle

PCs, Laptops and Standardized Applications

Assessed Area	Findings	Observations	
# of Desktops, Laptops	600 Dell workstation systems supported.	Number of desktops/laptops is on par for the size of the City. Keeping the end user computers to a single vendor will aid with maintenance and deployment of new devices. Need to have a standardized upgrade management policy and inventory of each desktop.	●
Average Age of Desktops, Laptops	5-6 years	Desktops/laptops should be replaced every 5-6 years. The City will need to replace these devices over the next few years. It is recommended that the City does this in batches of ¼ of the fleet per year to ensure timely replacement. Scheduled to be replaced 2023 and 2024.	●
Operating System	Windows 10	Windows 10 is a stable operating system, however in 2-3 years they should look to explore migrating to the newest operating system Windows 11 after the OS has become stable.	●
Business Application Environment	Microsoft Exchange on-premises.	The City should consider migrating to Microsoft 365 Business Premium in order to stay current with updates, better automate the security of the email, and more efficiently manage the desktops and mobile devices in the City.	●
Hardware Replacement Cycle	Workstation Systems: after 6 years. No formalized replacement cycle in place. Replace hardware as needed.	A hardware replacement cycle allows resources and budgets to be pre-allocated. Desktops and laptops should be purchased and deployed all at once every 4-5 years.	●

Mobility

Total # of Mobile Devices, Smartphone/Tablet Hardware, BYOD Support, Application Integration, Hardware Replacement Cycle

Smartphones and Tablets

Assessed Area	Findings	Observations	
# of Smartphones	400 iPhones, average 2 years old. Range from 0 – 5 years old.	The City needs to ensure that City data is not kept on individual phones and needs to remind staff of the cell phone use policy on a frequent schedule.	●
Bring Your Own Device (BYOD)	The City does not support BYOD and IT manages all City mobile devices deployed.	ActiveSync is a client protocol that lets users synchronize their Exchange mailbox with a mobile device.	●
# of Tablets	50 Tablets, Apple iPads	Number of tablets deployed is on par for the size of the City. Keep the tablets hardware to a single manufacturer and replace as needed.	●
Average Age of Tablets	3 years	Ensure IT has an inventory of tablets stored for time efficient deployment. Keep track of what applications are on which tablets and preinstall software on each tablet before deployment.	●
Application Integration	Mobile functionality exists within the Enterprise ERP systems, although not all departments have opted to utilize it.	A Business Analyst position could help Departments better utilize existing system functionality. Most often Utilities, Public Works, and Community Development need mobile capabilities for automated field work.	●
Hardware Replacement Cycle	None	A hardware replacement cycle allows resources and budgets to be pre-allocated. Tablets should be replaced every 5-6 years or when needed.	●

Telephony

Total # of Phones Supported, Telephone System Infrastructure, Service Provider, User Satisfaction, Hardware Replacement Cycle

Telephone System

Assessed Area	Findings	Observations	
# of Office Phones	450 VoIP phones	Number of phones is on par for the size of the City.	●
Telephone System Infrastructure	VoIP phone system with Cisco hardware and handsets.	A VoIP phone is a hardware-or software-based telephone designed to use voice over Internet Protocol (VoIP) technology to send and receive phone calls over an IP network. This type of phone system is very effective and cost-efficient providing communications to City staff over existing infrastructure. Cisco is a leader in the telephony space and the City should continue to deploy for all City phones over the next years.	●
Age of System	System is scheduled for a hardware refresh in 2023, components have been received.	New system will be in place later this year, which includes new handsets and conference equipment. Once the handsets reach 10 years old, replacement is recommended.	●
User Satisfaction	Most users are satisfied with the telephones and its functionality.	IT has done a good job with the telephone system bringing functionality to the users and DR on the backside.	●
IT Staff – Telephone System	Currently one dedicated staff to support the system.	Ensure that the newly implemented telephony system has warranties on hardware. Any problems with the system should be directly handled through the vendor with the assistance of IT.	●
Hardware Replacement Cycle	Hardware is scheduled for replacement or upgrades in 2023 and forecasted within budget cycle dependent upon hardware type.	A hardware replacement cycle would be useful to ensure handset are replaced and budgeted for in a timely manner.	●

GIS

Dedicated Staffing, Version Levels, Integration with Applications, Database Model, GIS Support, Training

Introduction

Municipalities are in the business of managing land and the functions associated with managing that land. A GIS system is an operational system designed to track as much data about pieces of the City as the City decides is practical and feasible. The GIS is composed of layers, which are slices of the geobase. The geobase is data about each of the locations that can be graphically presented in thematic maps, as illustrated below.

Because the geobase represents specific places within your City, it can be used for application integration and address validation across the City. The advantage of this is that multiple systems can use the same geobase. This makes it possible to combine and analyze data from disparate systems, such as those shown to the right.



GIS as a technology resource is becoming the central application interface in many municipalities; so the core applications sets (i.e., Administrative, Operations, Public Safety) draw from and/or push data to GIS. The City's GIS is moving to ESRI's recommended Local Government Model, which includes a series of essential foundation layers and operational information that support a range of key maps and apps within a local government. It is designed to meet specific application requirements and provide cartographic design elements necessary to produce rich, multi-scale base maps and operational layers. As the City's applications infrastructure advances, the City will become more heavily reliant upon GIS as a central clearinghouse of data.

Dedicated Staffing, Version Levels, Integration with Applications, Database Model, GIS Support, Training

Geographic Information System (GIS)

Assessed Area	Findings	Observations	
GIS Platform	ArcGIS Map is being used for geometry data editing. ArcGIS Pro is also currently being used for many other tasks, including spatial analysis and map production.	ESRI ArcGIS is the standard for municipalities throughout the country. ArcGIS Pro is the elite on-premise solution that ESRI offers. After the GIS Upgrade Project is completed, The City should see more advanced functionality with this system and all data editing tasks will utilize ArcGIS Pro and Enterprise.	●
GIS Data Model	Per recommendations from ESRI, the City uses certain portions of the Local Government Information Model.	The Local Government Information Model (LGIM) is an information model of GIS datasets and web services that integrate processes across municipalities in the United States.	●
Interfaces with Other Systems	Provides integration and interfaces support to enterprise applications.	Several City applications are fully interfaced with the GIS system.	●
End User Maps	ArcGIS Field Maps, ArcGIS Map	Mapping software is meeting the functionality that the City needs.	●
GIS Team	The GIS team is under the IT Department. Department has a key user that oversees all activity and training regarding GIS. Key staff member eligible for retirement in the next three years.	The level of staff for the GIS team is adequate when compared to benchmarks of similarly size cities. It is recommended that the team begins exploring succession plan for retiring key staff members.	●

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Introduction

The applications utilized by municipal governments are centered on three, highly contained systems enhanced by GIS data:

- Administrative Systems that focus on managing core financial transactions (e.g., general ledger, accounts payable, accounts receivable, utility billing), but do a less effective job of managing other administrative functions (e.g., payroll, human resources)
- Public Safety Systems that focus on managing mission critical functions (e.g., computer aided dispatch, digital dispatch), but do a less effective job of managing other public safety functions (e.g., records, automated field reporting, Fire records).
- Operational Systems that focus on transactional functions (e.g., business license issuance, work orders), but do a less effective job of managing operational integration (e.g., asset management and planning/building/zoning management).
 - GIS provides the City with the ability to take information from the disparate systems shown above and relate them. Since the City is largely in the business of managing plots of land, every transaction the City performs with any of its systems is related to a place; this can be a utility bill going to 123 Main Street, a police car being dispatched to 123 Main Street, or a water main being placed in the ground outside 123 Main Street.



Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

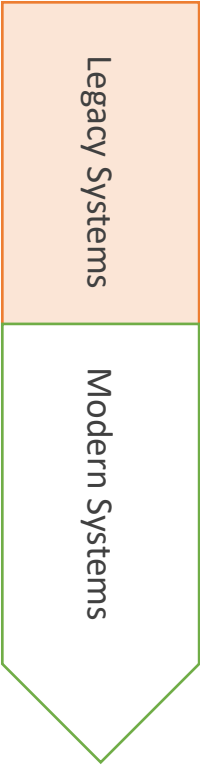
Introduction

Legacy Systems

Many cities today still rely on legacy applications to perform critical business functions. But while these systems perform Finance, Accounting, Payroll and, to a lesser extent, Human Resource capabilities, cities are beginning to demand more comprehensive functionality. Municipal ERPs grew to encompass most core components of a City’s operation, specifically Utility Billing, Public Works functions of asset management (i.e., tracking and maintenance management), and Community Development functions of plan review management, business licensing, building permits and inspections, and code enforcement.

Legacy systems from this time period are considered to be data rich yet information poor; while a good amount of data was collected, it was difficult to turn this into actionable information. By the time reports were produced, the information was out-of-date and unusable for making timely decisions.

As a consequence, departments have created workarounds to ensure that they can deliver services to their customers. They have turned to 3rd party developed solutions that are being integrated with the core application. But most of these applications operate over varied hardware and application programming languages. The multiple platforms supported by the City leads to an environment that is more difficult to manage and plan for, and a siloed nature for the departments.



Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Introduction

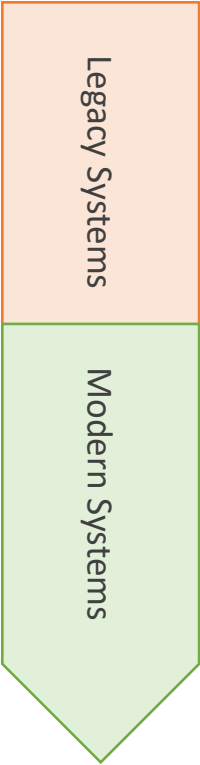
Modern Architected Systems

Legacy systems are being replaced with intuitive, modern architected applications that are integrated and accessible through web portals. In this there is no single application that organizations use to manage all parts of their business. The key is to dynamically link the several systems that run a City’s business operations, through service orientation and integrated business process management, to deliver the right information to the right people, at the right time. The balance is having enough systems to provide quality services while as few systems as possible to minimize purchase and support costs.

The City should be pursuing a strategy of simplification and standardization. The greater variety of operating systems and hardware platforms that the IT Department has to support, the less effective they can be at maximizing their limited support resources. The City needs to consider a software architecture that allows it to leverage the pool of limited IT resources, including:

- Use of hosted, Web-based solutions (Cloud-based applications). While this approach allows the City to offload the infrastructure needs (network, servers, and data centers) to a vendor in the Cloud, the costs are typically similar to owning the application over a five-year period, making it of equal or sometimes greater cost to the City.

The next few pages describe the current applications environment in the City.



Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Overall Application Architecture

Application	Findings	Observations	
Department interviews were conducted to review the major strengths and weaknesses of the City's applications environment.			
Overall City Application Architecture	The City of Kennewick's overall application architecture is characterized using Tyler Munis ERP System with integrated applications and peripheral non-integrated applications. The City is still in the middle of their ERP implementation and not all module phases have gone live. Some peripheral non-integrated applications (e.g., Liquid Office) exist solely since implementation is still incomplete.	Over the past several years, the City has had to increasingly rely on technology to maintain its scope and quality of service. However, the City is still having to use some systems that are not architected for today's GIS-based, Cloud-centric, mobile environment; nor were citizen and employee self-service functionality taken into consideration. The City must continue to move forward with implementation process to build a fully integrated system.	●
	At times, the City has decided to take a best-of-breed approach for department specific needs; meaning that each department chooses the system that best meets their needs, but as a result the City departments have become somewhat siloed from each other. Few interfaces exist to integrate these systems together or to provide comprehensive reporting.	Due to this strategy, departments have become internally focused instead of looking at the City as a whole. While this strategy can work, it takes strong leadership and a large IT staff to support and create the necessary interfaces to automate business processes in the departments.	●
	As a result, data is difficult to extract, analytics are not always dependable, and reports are time-consuming to create (e.g., Finance reports).	It will become increasingly difficult to obtain the data City Management needs if certain sections of the environment stay segregated.	●
	Often, IT is not an active part of the selection of department specific applications. This due to a lack of governance in which department heads meet and discuss their technology issues on a regular basis. This has led for some disconnect in the applications architecture.	For the City of Kennewick, it is recommended that they activate their IT Steering Committee, and define what apps are not necessary and which ones can be combined into a single solution. IT should begin managing the contracts for all software, even the department-specific Cloud apps.	●

Enterprise Applications

Kennewick Complete List of Current Applications

Active Directory	Council Equipment Support	F5 Application Delivery	MS Word	Site Plan Print Tool	Valve Exercising Controller
Active Sync	County Parcel Sync for	Fire Complaint Investigation	MS Zoom	SmartForce	Veeam
AD Connect Synchronization	Energov	Process	Munis	Solarwinds	Verizon Accounts
AD Federation Services	Crystal Reports	Fleet Custom Reports	NeoGov	SQL Server	Visual Studio
Adobe Acrobat	CSS (Customer Self Service)	II-Text Search	NESSUS	SQL Server Reporting Services	VMWare
Advanced Authentication	Dameware	GIS App Builder Applications	NetMotion	Swagit	Voicemail
Airwatch	Data Interoperability	GlobalProtect	etwork Configuration	Synergex	VPN
AP Upload to Munis	Extension	GovQA	Manager	Telco	Web Client
ArcGIS	DocuSign Integration	HDL - Business Licensing	Network File Services	Timecard Process	Windows Distributed
Arctic Wolf	Domain Name System	IG Inspect	New Program Requests	Tokay Backflow Prevention	Filesystem
As Built Database	Domain Registrars	ImageTrend	Office 365	Software	
Attribute Assistant	Dynamic Host Configuration	Incident Reporting	Office and Outlook Integration	Tokay Web Test	
Autodesk	Protocol Service	Indexing/Scanning	Onboarding	Trackit	
Axon Body Camera Videos	EAM (Asset Management)	Informacast	Outlook Web Access	Traffic Control	
BlueBeam	Eden	Intergraph Mobile (MPS)	Parcel Researcher	Traffic Crash Location System	
Bridgepay Integration	Email	Jabber	PayGuardian	Travel Authorization	
Budget Adjustments	Email Antivirus	Karpel Case Management	Paymentus Integration	TriTech Ambulance Billing	
Busylights	Emergency Responder	Liquid Office	PayPal	Tyler 311	
Calendar	Energov	Microsoft Power BI	Printing Services	Tyler Cashing	
Cisco	Enterprise Vault - Archive	Mobile Guard/SMARSH	Project Mapper	Tyler Content Management	
Civic Plus Agenda	Solution	Mobile Private Network	Quadrant	Tyler HUB	
Management	Esteem Network	Mobileguard/Smash	Records Management	Tyler Socrata	
COK Payroll Export Process	Exagrid	MPN	SCADA	Unity Client	
Contact Center	Exchange - Mail Services	MS Excel	Sector	Unity Forms	
Contract Tracker	Executime	MS Outlook	Sensus Analytics	Utility Billing	

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Department Specific Applications

Area	Findings	Observations	
Finance	Software: Finance has transitioned from Eden and is currently using Tyler Munis ERP.	Transitioning off a legacy system to a new modern ERP system is a good decision. However, staff has expressed struggles in producing similar historical reports in the new system. Staff have also struggled using the new budgeting module and they frequently turn to manual workarounds in order produce accurate projections. The City should explore revising internal work processes, reviewing software configurations and providing additional training for staff in order to access all capabilities the system offers.	●
	Scope of Tyler Munis: Finance, Purchasing, Fleet, Accounting, Accounts Payable, Capital Budgets/Grants Tracking.	Majority of information is in integrated systems or data warehouse. Although the system seems fairly extensive with regards to the modules it offers, the City should explore retraining staff in order to access all capabilities the system offers. Fleet Custom legacy reports were based on Crystal Reports which need to be re-written in SSRS.	●
	Budget: All done in Excel and then imported into Munis.	This is an opportunity to access Tyler Munis functionality and train users on how to enter budget directly into Enterprise ERP (Munis) or explore 3 rd party applications to cover this gap and automate the process.	●
	Purchasing: Centralized purchasing function in the City, done through Tyler Munis. Fully integrated system, Web-based application.	This functionality seems to be meetings department needs. However, staff have expressed concerns with purchase orders not being liquidated accurately, and the performance of display screens ex: "Unexpected Error".	●

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Department Specific Applications

Area	Findings	Observations	
Human Resources	Payroll: Done through Eden and integrated with Crystal Reports, Liquid Office and OnBase. Currently have no timeclocks.	Currently staff submits timecard information each pay period and use a Windows application (in-house application) written by City staff to format and map data exported from Liquid Office, however this won't be needed when the Payroll phase of the ERP project is complete.	●
	Applicant Tracking: Done in OnBase, however they also have NeoGov (in the process of testing out functionality).	Currently OnBase meets all department requirements, but NeoGov is a best-in-class application tracking and onboarding software. The City should see improvements with the use of this software.	●
	Onboarding: OnBase Personnel files are both digital and paper-based.	Onboarding is currently done on OnBase and managed when onboarding new employees. The City should review this process when employee data is moved to Munis.	●
	Human Capital Management (HCM) implementation: currently in the middle of HCM implementation.	This software is an integrated suite of technologies that can help the City manage their employees.	●
Utility Billing	Currently using Eden for Utility Billing (UB) but transitioning to Tyler Munis. Majority of addresses are connected to GIS; addresses are validated. Overall, they are happy with the functionality of Eden.	Validating addresses in the new system through GIS is important to ensure accuracy of address information. Ensure that Tyler Munis will be interfacing with GIS to do this. Staff have expressed concerns regarding the ability to query which will cause difficulty producing dependable reports when the Department transitions to Tyler Munis.	●
	Meter Setup/Reading: Manual readings, going into Eden through the Sensus Network.	When Tyler Munis UB project goes live, there will be data conversion.	●

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Department Specific Applications

Area	Findings	Observations	
Public Works	GIS: Works well and is integrated with Munis, all data bases come from Munis. Most assets are geo-validated – no duplicates or typos	Integration to tie together the financials with the work order/assets is important for Finance. In addition, the system is geo-validated against GIS to ensure addresses are correct.	●
	Asset Tracking: Is done leveraging GIS and EAM. Not all departments are leveraging the systems.	Department should start tracking assets in the systems to help prevent from potential errors or inefficiencies.	●
	SCADA: Fiber and Ethernet Radio Has its own servers, that are maintained by the IT department. VPNs: 2 Verizon NPRN (Encrypted and Segregated)	The City's network traffic and the SCADA system are segregated on different fiber strands; this creates a secure environment and lowers risks to the control of the City's water supply.	●
	Projects: - Building new plant: would come live at the end of the next year. - Would like to integrate MFA (servers and login) for SCADA system. - Deploying a separate server for regular production at the Frost site. - Install card readers at important sites to improve security.	Overall, the department is running smoothly. Work with IT to ensure that the building of new plant is within guidelines to fully support all technological needs. Boosting security for the SCADA and for key locations through physical controls would not only keep the department safe but the entire City.	●

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Department Specific Applications

Area	Findings	Observations	
Parks	Scope of Service:	Fairly complex, diverse parks system in the City.	●
	Recreational Management (CivicRec): Software works well, all end user needs are met. However, staff feel like there are more features to the software they are not utilizing.	CivicRec is a good mid tier products for cities the size of Kennewick.	●
	Employee Scheduling: Done on paper, manual	Explore utilizing the Advanced Scheduling Module being deployed within Tyler Munis in 2024 to resolve these issues.	●
	Programs and Events Management: Using CivicRec and Excel to plan and organize.	Special Events create the highest revenue, and the current workflow no longer meets the needs of the Department. Exploring a software that provides functionality through a single, integrated system will streamline the process.	●
	Projects - Install card readers throughout various park locations. - Install Musco Lighting in all park locations.	Installing card readers and Musco lighting in all park sites will improve security, and safety through the City.	●

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Department Specific Applications

Area	Findings	Observations	
Police	RMS/CAD/Mobile System: Currently using Public Safety solution by Tyler. Implementation process was not as successful as they were looking for. Some major concerns about the software and potential issues are: • Department is forced to utilize Sector software (Washington requirement this creates duplication when inputting information into Tyler cases. • The editor on Tyler Mobile does not handle advanced formatting and special characters well and force staff to restrict format of report. • Tyler key/tag word search capabilities are poor. • Crime Analysis: Staff have expressed that other tools such as Excel spreadsheets have been more beneficial, and Tyler just serves as a supplement. • Property and Evidence: Tedious and difficult process, can be very time consuming. • Inaccurate Reports: Statistics, and Data: Identifies the lack of training to develop needed reports in the system. Manual workarounds needed to verify the information.	On top of Tyler RMS missing functionality for the Police Department, BIPIN organization has different software between CAD and RMS (Intergraph and Tyler RMS Public Safety) which creates a fractured structure. IT Department is responsible for the entire BIPIN technological environment which stretches the department thin, PD could benefit from a business analyst to help them identify issues and work with Tyler to develop reports, test upgrades and train changes in the system as functionality is upgraded. In addition, the initial training may have not been sufficient and therefore the software configurations suffered as well. It would be beneficial to retrain end users on the configurations of the system.	●
Fire	FRMS: ImageTrend (Regional Platform) – Cloud Based	Call automatically creates a record number into FRMS. Fire is satisfied with this software. ImageTrend also handles all the Department reporting.	●
	FRMS and other core applications: Vector Solutions – Cloud Based : Fire expressed they are satisfied with the software. Training and scheduling are done through this software.	Vector Solutions was recently acquired by the City. Fire expressed the system does most of the things it needs to do. Want to explore interfacing Vector with Tyler.	●

Enterprise Applications

Core City Applications to Include ERP, Planning and Development, Public Works, Document Management, Public Safety RMS and CAD, and Website

Department Specific Applications

Area	Findings	Observations	
Fire	Projects: Fire is switching from Getac to Dell hardware.	Staff expressed they are satisfied with the hardware vendor. However, have expressed in the future would like to be a part of the selection process.	●
	Health and Emergency Management: ImageTrend	Software meets all needs and has capabilities. Chief Deputy for Pasco handles all communication with vendor.	●
	Other: Would like to get body cams for fire investigators.	Work with IT Department to explore options. Fire could consider and look into using Axon. Would fall in a 2025-2026 project timeline.	●
City Clerk	Agenda Management: Currently using CivicClerk.	CivicClerk is a good selection for agenda management software, should improve processes.	●
	- Contract Management: Currently done on OnBase; managing most IT City wide contracts, but staff expressed they don't have control over all Cloud based contracts for individual departments. - Records Retention: if records are essential, they keep a hard copy forever. - Scanned Records: have many documents needing to be transferred and archived. - FOIA: Using GovQA – online public records portal, meets functionality for the City.	- City needs to have more control over all IT wide contracts. This creates governance, structure and allows the departments to be aligned. - Taxonomy is left to each department; however, the City should look to have all files in one location. - City has outsourced to have all records scanned, but it did not go as expected. Should consider exploring this option again and seek out different companies. - Staff expressed they would like to review FOIA tool in the next three years.	●

Business Continuity

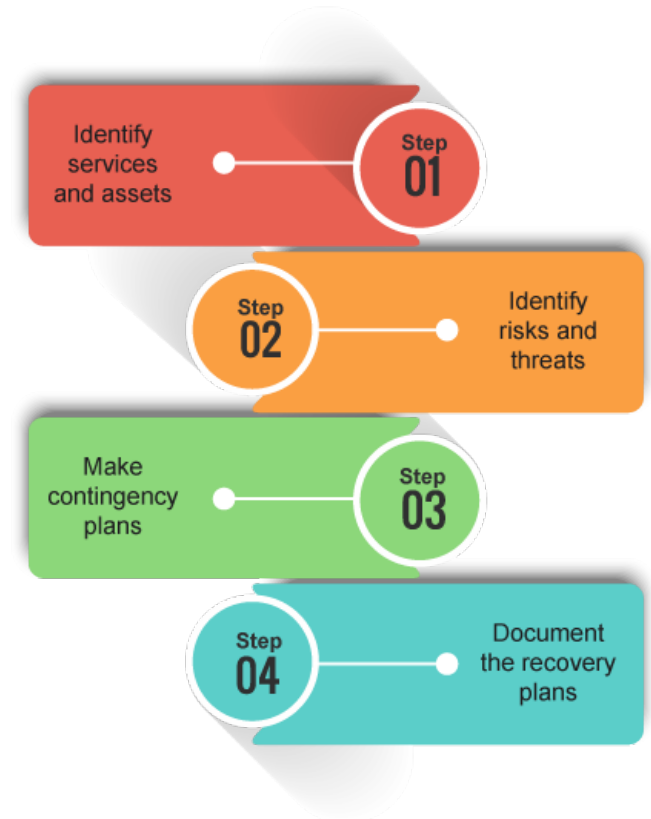
Current DR Plan, Replication of Services, Network Stability, Backup Data Center, Documentation

Introduction

IT Service Continuity Management, which was previously known in the Information Technology Infrastructure Library as contingency management, focuses on supporting the overall business continuity management process by ensuring that in the event of a business interruption required IT services can be recovered according to an agreed schedule.

The focus is on minimizing the business disruption of mission-critical systems. This process deals with planning to cope with and recover from an IT disaster. An IT disaster is defined as a loss of service for protracted periods, which requires that work be moved to an alternative system in a non-routine way. It also provides guidance on safeguarding the existing systems by the development and introduction of proactive and reactive countermeasures. IT service continuity management also considers which activities need to be performed in the event of a service outage not attributed to a full-blown disaster.

IT service continuity management builds upon risk management principles and identifies key risks to service provision, assesses the likelihood of occurrence, determines the impacts, defines mitigation measures to reduce the probability of occurrence and/or reduce the impact of the risk condition, and provides contingency plans for business continuity in case the risk event actually occurs.



Business Continuity

Current DR Plan, Replication of Services, Network Stability, Backup Data Center, Documentation

Continuity of IT Operations

Assessed Area	Findings	Observations	
City Continuity of Operations Plan (Operational Priorities)	None	Define, document and implement a Plan where in the event of a disaster or emergency, the City has a clearly defined process for getting business units up and running. The prioritization of functions is an important first step and the Plan should be built from this.	●
IT Disaster Recovery Plan	IT does have a written Disaster Recovery Plan, but many of the elements that are critical to the Plan are not included. A redevelopment of this Plan is required.	Define, document and implement a process by which each service is included in a single Service Continuity Plan, which details the recovery options, prevention measures and procedures in the event of a loss of key components. Work closely with the business to agree the contents of the Plan and ensure that risks and recovery times are understood and accepted. Consider including a summarized version of the Plan in the customer's SLA. Ensure that key staff in It and the business are aware of the contents of the plan. Ensure that appropriate technical procedures are referenced in the plan where appropriate. Ensure that the business continuity planning areas have IT Service Continuity plans available for reference.	●
Replication of Services	IT can replicate services if the City Hall data center goes down and the FPUD is still up.	City has a secondary network connection and a complete fiber infrastructure to enable the network to become recoverable and reroute itself if a fiber segment fails.	●
Backup Data Center	The two data centers in the City are more than five miles apart and actively sync data between the two for critical applications.	Build out a secondary data center to quickly recover systems and data in an emergency.	●

Business Continuity

Current DR Plan, Replication of Services, Network Stability, Backup Data Center, Documentation

Continuity of IT Operations

Assessed Area	Findings	Observations	
Time Requirements	A time period has NOT been identified for how long the organization is willing to go with a disruption to service for each system.	As part of the recovery options, identify recovery time objectives for each system. Ensure that system restoration times meet customer expectations, and where appropriate, Service Level Objectives.	●
IT Cross-Training	Critical IT roles have NOT been cross-trained to ensure continuity.	Staff should be cross-trained between areas to ensure continuity if someone leaves. This provides employees with the opportunity to be ready if critical roles are needed to be performed.	●
IT Staff Time-Off Coverage	IT staff does not have enough coverage when someone is off or on vacation for a long time period. IT staff are flexible to cover for team members when they are out.	Staff coverage is important to the ongoing service of the IT Department. It ensures that when a staff member takes time off, the duties and roles will not go unperformed. Try to manage vacation time for staff so there are not many gaps in coverage for significant periods of time.	●

Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

Introduction

An integrated security strategy encapsulates the main processes of prevention and detection over a series of layers which include the Physical Environment, Front-End Systems, and Back-End Systems. The combination of layers each with their own security controls constitutes a comprehensive defense-in-depth security architecture.

The key to the deployment of this architecture is to implement a systems management environment that allows the System administration to provide status reports and maintain the various layers with software and configurations that are up to date.

Physical and Environmental Security

The security controls at this level aim to prevent unauthorized physical access or interference to the City’s equipment and information assets.

End-Point Security

Front-end system security covers all application-level system functions and integrity requirements between the application itself and end-user interface. It suggests that application data should be well protected against any potential threat that might cause loss, damage or unauthorized access by internal or external users. Application change management processes and application authentication and authorization controls are examples of controls that fall under this level.

Physical and Environmental Security



- Data Center
- Equipment Rooms
- Physical Access
- Camera Monitoring

End-Point Security

Computer Security



Mobile Security



Users



- Email Security
- VPNs
- Encryption
- Anti-Malware

Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

Introduction

Back-End System Security

Back-end system security includes any resource that is beyond application level components (e.g., hardware and software). Underlying network infrastructure and internal and external communications constitute the major components at this level. Examples include the configuration of back-end platforms, intrusion detection systems, firewalls, data and communication cryptographic schemas, and routers’ and switches’ access control lists. In addition, for Public Safety systems the FBI CJIS Communications stipulates that any query to the Criminal Justice Database must be secured and encrypted.

Risk Assessment Description

The assessment consists of 100 questions designed to identify the business risk of the organization and the security measures deployed to mitigate risk. Focusing on common issues, the questions have been developed to provide a high-level security risk assessment of the fundamental technology, processes, and human resources that supports the business operations. The questions are arranged as to the security aspects of the infrastructure, applications, operations, and human resources.



Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

Maturity Level

Security maturity refers to the evolution of strong security and maintainable practices. A five-tier security maturity model is used. At the low end, (Initial) few or no security defenses are employed, and actions are reactive. At the Managed level, increased security measures are deployed in support of a defined strategy. At the Repeatable level, an increase level of proactive security measures is deployed. At the high end (Optimizing Level), established and proven processes allow an organization to be more proactive and respond more efficiently and consistently when needed.

There is no denying that a system cannot be absolutely secured, since there is no fool-proof silver bullet system or security solution. There is always a probability, however small, that something could happen. Security measurement is always a subjective issue, since different people have different perspectives. Therefore, fully optimized and definite security can never be completely fulfilled, and there is no such thing as a 100 percent secure environment. Instead, security is a continuous process.

Maturity Level	Rating
Level 5: Optimizing	5
Systems are highly secure and are designed in such a way that they can detect and recover from many known incidents almost immediately. The systems security effectively protects the right things the right way and ensuring ongoing utilization of best practices. Business Continuity Planning is performed on a regular basis. Security awareness requirements are identified and affected by people. The scope of security awareness includes <u>all</u> of the organization's staff members and encapsulates the practice of the lower levels' requirements. However, like the previous levels, the three main processes apply in this level as well. Encryption mechanism for network traffic (prevention), configuring an intrusion detection system (detection) and ensuring backup communication lines (recovery) are clear examples.	
Level 4: Managed	4
Multiple layers of defense deployed. Additional layers include Back-end systems. Examples include the configuration of back-end platforms and intrusion detection systems.	
Level 3: Defined	3
Increasing layers of defense deployed in support of a defined strategy. Additional layers include network infrastructure and internal and external communications. Examples include the firewalls, data and communication cryptographic schemas, <u>routers</u> ' and switches' access control lists. Security of application systems, security in development and support.	
Level 2: Repeatable	2
Some proactive security measures deployed as first-line <u>defenses</u> ; operations and incident response still very reactive. Some areas of focus at this level include the information security infrastructure, security of third-party access, accountability for assets, and initial user training.	
Level 1: Initial	1
Little or no security measures in place. The security controls at this level aim to prevent unauthorized physical access or interference to the information assets. Little or no user training and awareness is in place.	

Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

Infrastructure Risk Assessment

Infrastructure risk assessment focuses on how the network should function, what business processes (internal or external) it must support, how hosts are built and deployed, and how the network will be managed and maintained. Effective infrastructure security can help provide significant improvements in the areas of network defense, incident response, network availability, and fault analysis. By establishing a sound infrastructure design that is understood and followed, an organization can identify areas of risk and can design methods of threat mitigation. The assessment reviews high-level procedures that a City can follow to help mitigate infrastructure risk by focusing on the following areas of infrastructure risk.

- **Perimeter Defense:** Protect the core infrastructure from external attack. Perimeter Defense addresses security at network borders, where the internal network connects to the outside world. This constitutes the first line of defense against intruders.
- **Authentication:** Verify the digital identity of user attempting to gain access to computer resources. Authentication procedures for users, administrators, and remote users help to ensure that outsiders do not gain unauthorized access to the network through the use of local or remote attacks.
- **Management and Monitoring:** Maintain vigilance of information resources. Management, monitoring, and proper logging are critical to maintaining and analyzing technical environments. These tools are even more important after an attack has occurred and incident analysis is required.

Infrastructure Risk Findings

Using the maturity definitions outlined above, the maturity level of the infrastructure security of the overall IT organization is that of **“Defined”**. This overall rating is comprised of three areas each of which is further rated below.

Area	Rating
Perimeter Defense	 4
Authentication	 3
Management and Monitoring	 4
Overall Score “Defined”	3.28

Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

Applications Risk Assessment

A thorough understanding of application security requires in-depth knowledge of the basic underlying application architecture as well as a solid understanding of the application's user base. Only then can potential threats be identified. This assessment is meant to review applications and assess them from a security and availability standpoint. It examines technologies used within the environment to help enhance Defense-in-Depth. The assessment reviews the high-level procedures an organization can follow to help mitigate application risk by focusing on the following areas of application security.

- **Management and Monitoring:** Maintain vigilance of information resources. Management, monitoring, and proper logging are critical to maintaining and analyzing IT environments. These tools are even more important after an attack has occurred and incident analysis is required.
- **Deployment and Use:** Continued availability of key applications. When business-critical applications are deployed in production, the security and availability of those applications and hosting servers must be protected. Continued maintenance is essential to help ensure that security bugs are patched and that new vulnerabilities are not introduced into the environment.
- **Data Storage and Communication:** Data Integrity for storage and communication. Integrity and confidentiality of data is one of the greatest concerns for any business.

Applications Risk Findings

Using the maturity definitions outlined above, the maturity level of the applications security of the overall IT organization is that of **“Repeatable”**. This overall rating is comprised of three areas each of which is further rated below.

Area	Rating
Deployment and Use	3
Application Design	3
Data Storage and Communication	1
Overall “Repeatable”	2.22

Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

Operations Risk Assessment

This area of analysis examines the operational practices, procedures, and guidelines followed by the organization to help enhance Defense-in-Depth. The assessment reviews high level procedures an organization can follow to help mitigate operations risk by focusing on the following areas of operations security.

- **Environment:** Ability to manage and maintain the security environment. The security of an organization is dependent on the operational procedures, processes and guidelines that are applied to the environment. They enhance the security of an organization by including more than just technology defenses.
- **Security Policy:** Fundamental security guidelines. Corporate security policy refers to the collection of individual policies and guidelines that exist to govern the secure and appropriate use of technology and processes within the organization. This area covers policies to address all types of security, such as user, system, and data.
- **Patch and Update Management:** Ability for hardened, resistant systems. Good management of patches and updates is important in helping secure an organization's MIS environment. The timely application of patches and updates is necessary to help protect against known and exploitable vulnerabilities.
- **Backup and Recovery:** Data integrity. Data backup and recovery is essential to maintaining business continuity in the event of a disaster or hardware/software failure. Lack of appropriate backup and recovery procedures could lead to significant loss of data and productivity.

Operations Risk Findings

Using the maturity definitions outlined above, the maturity level of the operations security of the overall IT organization is that of **“Repeatable”**. This overall rating is comprised of three areas each of which is further rated below.

Area	Rating
Environment	 2
Security Policy	 2
Patch and Update Management	 4
Backup and Recovery	 3
Overall “Repeatable”	2.64

Security Risk

Perimeter Defense, Authentication, Monitoring, Application Deployment, Design, Data Storage and Communications, Security Policy, Patch Management

IT Organization Risk Assessment

Security efforts in an organization often overlook organization aspects that are critical to helping the organization maintain overall security. This section of the assessment reviews those processes within the enterprise governing corporate security policies, Human Resources processes, and employee security awareness and training. It also focuses on dealing with security as it relates to day-to-day operational assignments and role definitions. The assessment reviews high-level procedures an organization can follow to help mitigate people risk by focusing on the following areas of human resource security.

- **Requirements and Assessments:** Continuous knowledge of vulnerabilities. Security requirements should be understood by all decision-makers so that both their technical and their business decisions enhance security rather than conflict with it. Regular assessments by a third party can help an organization review, evaluate, and identify areas for improvement.
- **Policy and Procedures:** Clearly defined expectations and termination procedures. Clear, practical procedures for managing relationships with vendors and partners can help protect the organization from exposure to risk. Procedures covering employee hiring and termination can help protect the company from unscrupulous or disgruntled employees.
- **Training and Awareness:** Reduce internal based risk. Employees should be trained and made aware of security policies and how security applies to their daily job activities so that they do not inadvertently expose the company to greater risks.

IT Organization Risk Findings

Using the maturity definitions outlined above, the maturity level of the organization security of the overall IT organization is that of **“Defined”**. This overall rating is comprised of three areas each of which is further rated below.

Area	Rating
Requirements and Assessments	 5
Policy and Procedures	 2
Training and Awareness	 2
Overall “Defined”	3.13

Things to Consider

Servers, Storage and Backup

- IT has deployed a traditional server environment with virtualization utilized to reduce data center complexity and save expenses.
- Servers are replaced on traditional industry standards (5 years).
- City has adequate storage and server space to handle needs.

Data Center

- The City's main data center is in City Hall, it is well built and provides good performance for the City's systems.
- The main data center lacks a fire suppression system used to avert the risk of fire damage to data center hardware.
- The main data center's cooling system is also aged and could lead to issues such as overheating of servers.
- Backups of all City data and systems are actively synced to the FPUD data center (secondary) and can be spun up quickly if City Hall data center goes down.

Network

- The City has a complex distributed Network with three cores (City Hall, FPUD and Frost).

Most external sites connect back to the core via BPUD leased circuits with a few sites in proximity that are connected via Agency owned fiber. The secondary and tertiary core sites are connected via 10Gbps circuits. The secondary site houses the infrastructure designed to protect the City's business continuity in the event of outages or disaster. An additional City Internet Service Provider has been established at the secondary site which will be used in the event of an outage with the City's primary Internet Service Provider.

Network and System Management

- Network and System Monitoring is done with various tools and a 3rd party company. SolarWinds Orion is a set of monitoring and discovery tools that the City has deployed internally. Arctic Wolf is a cloud based managed Detection and Response (MDR) utilized to provide 24/7/365 monitoring.
- Since IT has outsourced this function, constant communication is required to stay aware of current activities; overall, IT is satisfied with their provider and the service level they provide.

Things to Consider

State and Local Government Cybersecurity Challenges

- Some organizations lack dedicated security staff
- There's a major shortage of cybersecurity resources and talent in the market.
- IT and security budgets are still tight overall
- Cybercriminal and hacker's tactics and targets continually change.
- Increasingly, cybercriminals target local and municipal entities because they are aware of the lack of dedicated staff
- Local and municipal government Covid-19 pandemic budget tightening budget cycles delayed some security investments (e.g. resources and technical security improvements).

Agency Growth

- Local, and Municipal governments are adding resources in IT to support technology change, business improvements, and hybrid work force and systems.
- Queen Creek AZ, increased headcount 2020-2023 (4). Project Manager, Technician, Systems Analyst, Security Analyst.

- Buckeye AZ, increased headcount 2021-2024 (4) Business Analyst, Desktop Support, Project Manager, Security Analyst.
- Pasco WA, increased headcount (2021-2024) (3) Business Analyst, Database Administrator, System Administrator.

Cyber Security Hygiene

- Pronounced "technology debt" – vulnerabilities that arise from a backlog of overdue system patches/upgrades and unmitigated end of life or end of support technology.
- According to the Multi-State Information Sharing and Analysis Center (MS-ISAC) many local and municipal government organizations do not have fulltime cybersecurity staff, nor do they have the network monitoring tools or logging capabilities.
- Even with a virtual CISO investment, the agencies still need internal resources to interact with the vendor to coordinate work and mitigate issues.

Things to Consider

Cyberattack Headlines

- Ransomware attacks costs local and state government over \$18 billion in 2020. March 2021, www.americancityandcounty.com.
- One month and ransomware attack, Dallas reports 90% of its network has been restored. June 2023 www.americancityandcounty.com
- Cyberattacks on state, local government up 50%. Sept 2020. www.gen.com
- Ransomware attacks demanding larger payouts from local governments. August 2020. www.nextgov.com
- “Even though cyberattacks are becoming more and more common in today’s threat landscape, state and local governments often do not have the adequate resources to defend against them.” U.S Senator Maggie Hassan
- Many state and local governments lack the resources to address the increased pace of cyberattacks, with most states only spending 1-3 percent of their overall IT budgets on cybersecurity, compared to about 16 percent for federal agencies.

- Cyber attacks against government agencies and public sector services are up 40% in the second quarter of 2023 compared to the first quarter.
- This reporting period was dominated by news of ransomware groups targeting and breaching city and state government systems in North America.
- These included the LockBit incident against the city of Oakland in California, BlackByte’s Royal Ransomware campaign that affected Dallas, Texas and Augusta, Georgia.

Ransomware attacks continue to increase in frequency, severity & sophistication:



 ~\$800k average ransom payment;
 \$40M highest ransom paid to date

Things to Consider

End User Computers

- End user PCs and laptops are on a replacement cycle of every 4-5 years, which is industry norms.
- IT has been actively managing the procurement and deployment of PCs throughout the City.

Mobility

- The City buys and controls the mobile devices used by staff and does not support BYOD.
- Active management by the IT Department is the most effective way to support these devices; it is recommended to limit smartphones to only staff who need it for critical function of their job.

Telephony

- Cisco is a leader in the telephony space and the City should continue to deploy for all City phones over the next years.
- This type of phone system is very effective and cost-efficient providing communications to City staff over existing infrastructure.
- Average age of telephones are 4-5 years, and in the coming years will be reaching their end-of-life cycle.

Enterprise Applications

- HR: Work with IT Department to finish implementing HCM software.
- Utility Billing: Begin working with IT Department to prepare for UB phase to go live.
- Parks: Consider using Advanced Scheduling as scheduling software for employees.
- Parks: Explore different software for special event management.
- Police :Work with the Tyler Professional Services to review potential improvements or standardizations with the configurations.
- Police: Retrain end users on software functionality as needed (especially reporting and dashboards) and develop New Hire training process for onboarding of new users.
- Public Works: Utilize EAM, much of the inventory is not being tracked as of right now, this could lead to potential inefficiency and higher costs.
- Finance: Consider modifying legacy work processes, obtain additional end user training and review software configurations to optimize the system's capabilities.
- Fire: Explore options for body cameras for fire investigators, consider Axon as a possibility.

Things to Consider

Enterprise Applications (continued)

- City Clerk: Work with Departments to manage all IT City wide contracts.
- City Clerk: Work with Departments to move all files into one secure location.

Business Continuity

- Redevelop the IT Disaster Recovery Plan that details the recovery options, prevention measures and procedures in the event of a loss of key components
- Cross-train staff on core IT functions and ensure staff resources are available after hours

Security Risk

- Refer to Appendix A to get more details on areas of improvement for security

Potential Fund Sourcing

Technology Support unfortunately comes with a price tag. Many municipalities have or are looking to address the increased costs through a variety of ways:

- Technology Fees asses on specific services
 - Permit/Planning
 - Utility online processing
- Service Fees to offset operational cost
 - Pass-through fees for credit card processing
 - Community Events (i.e., temporary Wi-Fi availability)

Technology Fees

- City of San Antonio, TX (2007) – 3% technology fee
- City of Austin, TX – 4% technology fee
- City of Sacramento, CA – 8% technology fee on specific permit/plan reviews
- City of Long Beach, CA – 4% technology fee
- City of Coral Springs, FL - .61/thousand estimated cost
- City of Coweta, OK - \$1.25 per transition online utility payment fee

Introduction to Organization

Role of the IT Department

Over the last twenty years, investing in information technology has been an end unto itself. PCs were brought to improve productivity; networks were established to improve communications. With the advent of digital government, the purpose of technology investment and the role of the IT Department are changing.

The IT Department has traditionally been seen as a support function. To effectively undergo the transformation to digital government, the IT Department must be seen more as an equal partner to the functional, citizen-facing departments. The quality of service provided by the City to the citizenry is dependent upon this recasting of the Department. Technology is integral to the function of every department's business processes. The IT Department must continue to provide support for core business functions while providing leadership, all while facilitating core cross-departmental and City information management and technology functions.

The digital government transformation emphasizes information management over information technology, helping to ensure that technology investment decisions are supported by clearly defined business requirements. Technology must allow departments to better integrate their collaborative planning and coordination of initiatives, resources and investments to meet the City's goals and objectives. If it does not, the technology investment is hard to justify.

It is the IT Department's responsibility to manage the risks associated with implementing digital government. Effective implementation of digital government requires a centralized coordination of all departments' activities, including operational, financial, security and privacy related risks. To provide these support services while maintaining data integrity, security and privacy, key elements of the Information Technology function (e.g., network topology diagrams, access controls) must be centrally managed.



Meaningful
Work



Positive Work
Environment



Supportive
Management



Growth
Opportunity



Trust in
Leadership

Culture

IT Organization Environment and Behaviors

IT Ideal Work Environment

- As with any dynamic system, the City's provision of IT services must always be under development to respond to changing needs. For example, the organization is continually challenged by the introduction of new technologies and external security threats. Successful Information Technology organizations exhibit specific behaviors common to high performance organizations. These are shown to the right.

Organizational Behaviors	Brief Description
Culture Embracing Change as Continuous Improvements	The IT Department must view changes as part of the day-to-day management process, not something to be forestalled or ignored, but something inevitable needing to be managed. High performing organizations can handle large volumes of change activity with high success rates. The organization must have systematic processes for (a) registering issues, (b) identifying causalities, (c) identifying solutions and understanding the causal effects of the solution, and (d) incorporating this into their continuous improvement process. Quality management methods for IT, such as the Information Technology Infrastructure Library (ITIL), can be used as an effective tool to help management this change process.
Focus on Early Intervention	Organizations seeking to maintain high levels of performance intervene early in the change process, such as release management and testing. By focusing resources early in the process, errors and issues are prevented; reactive repairs made later in the process amplify resources needed. This ability to plan interventions, as opposed to react to problems, allows high performing organization to focus their energies; typically, they spend less than 5% of their time on unplanned, emergency fixes. (By contrast, the average, typical organization spends 35-45% of their time on unplanned, unscheduled work.)
IT Operations' Trusted Relationships	High performance organizations have solid, professional working relationships between: • IT Operations and Security, with security requirements integrated into IT Operations' processes, use of a defense in-depth strategy policy model, Active Directory and the latest security measures • IT Operations and Internal Auditors, with IT tracking compliance activity in manners approved and auditable by the Auditors.

Staffing Levels

IT Staffing Levels Compared to Benchmarks

Current Level of IT Staff

- The current total number of FTEs in IT is 19.0
- IT is utilizing fewer resources than the average organization in several areas: Applications Support/Business Analyst, Desktop Support Staff and Help Desk Support, while Server Support Staff and Network Support Staff are at satisfactory levels
- The most concerning area that is severely understaffed is the Applications Support/Business Analyst. There is also no dedicated Business Analyst within IT that works closely with departments to help identify findings and implement changes. This greatly limits efficiency and effectiveness of departments.
- IT Department is also understaffed in Help Desk staff and do not have enough available service agents to complete workload.
- Over the last few years, there has been a shift in IT culture from a reactive organization managing the internal environment to a more proactive one assisting departments with technology decisions; although improvements can still be made in this area to further this collaboration.

Metric	Staffing per Technology		FTE Adjustment		
	Benchmark	City of Kennewick	Kennewick FTE Count	Benchmark FTE Count	Suggest Adjustment
Instances per Server Support Staff Member	80	97.3	1.5	1.8	0.3
Network Devices per Network Support Staff Member	67	103.7	1.9	2.9	1.0
Applications per Application Support / Business Analyst	3.5	4.8	4.6	6.3	1.7
PCs per Desktop Support Staff Member	600	664	0.9	1.0	0.1
Users per Help Desk Staff Member	318	930	0.5	1.5	1.0

- The lack of overall resources in IT vs intensity leads staff to be backlogged and ultimately, they are unable to complete other critical tasks such as:
 - Document processes for emergencies and succession planning.
 - Train on basic systems/applications to give comprehensive support to end users.
 - Provide technology guidance for the end user departments for new initiatives and projects.

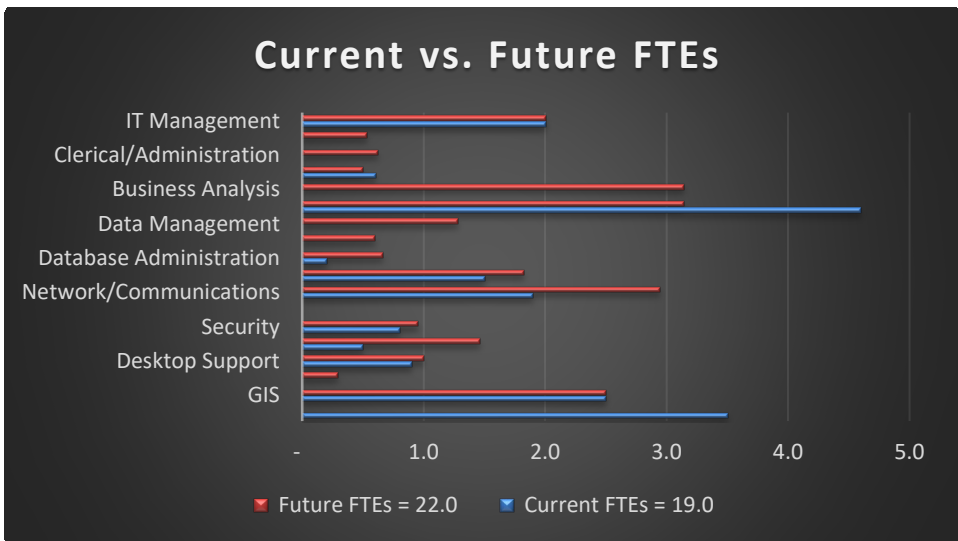
Staffing Levels

IT Staffing Levels Compared to Benchmarks

Benchmarks Compared to IT Intensity

- IT operational metrics were compared relative to Benchmark peers.
- The City’s and BIPIN’s technological environment is highly resilient yet complex. This results in a high level of IT Intensity. IT Intensity is brought on by the following factors:
 - Growing number of servers and storage hardware.
 - Managing 38 Network Sites.
 - Customer Service processing 2020 tickets per available service agent; optimal 1755 per available service agent.
 - Technicians are being assigned project related work due to staffing levels.

Metric	IT Intensity	
	City of Kennewick	Benchmark City
Main Data Centers	2	2
Network Sites	38	21
Business Applications	22	39
Users per IT Staff Member	24	31
Users per Printer	18.60	10
PCs per User	1.187	1.41
% Users with Tablets	9.89%	8%
Users per Network Site	12.24	86
PC Refresh Rate in Years	5	5
Operating Systems Supported	4	2
Custom System Usage	5%	23%



Applying these IT intensity characteristics, Sciens recommends:

- Filling open Infrastructure Supervisor position
- Adding 3.0 new positions
 - Systems Administrator
 - Help Desk Technician
 - Business Analyst
- If the opportunity develops, consider possible outsourcing of BIPIN Infrastructure and Applications management.

Staffing Levels

IT Staffing Levels Compared to Benchmarks

Additional Staffing

- Infrastructure Supervisor
 - The IT manager is currently performing both overall IT management as well as Infrastructure Supervisor. Due to the criticality and complexity of this position this position should be filled.
- Systems Administrator
 - Core infrastructure functions (e.g., Active Directory, Exchange) are being managed by a single individual. The volume and complexity of these core systems exceeds what can be managed by a single FTE. The addition of this position will allow the City to balance workloads and provide backup resources to mitigate the risk.
- Help Desk Technician
 - The IT department is highly reactive where 52% of staff activities are in response to crisis and issues as they arise. The addition of a Help Desk Technician will allow the department to improve their proactive activities.
- Business Analyst
 - The Business Analysts will assist end-users in determining their needs and optimizing their interaction with application systems.

- Project Manager
 - The Project Manager will be responsible for day-to-day management of projects (i.e., scope, schedule, finance, quality, and resources).

Outsourcing IT Application Functions

- The current limited staff resources combined with the IT intensity have put a strain on the services provided by the department. Some end users have complained about a lack of guidance identifying department specific functionality.
- Simplifying the current technical environment (Infrastructure and Applications) would allow IT to improve their level of service.
- Possible outsourcing considerations include:
 - Transition Management of the BIPIN Network Infrastructure to a regional agency outside of Kennewick. Currently IT Infrastructure staff are spending roughly 17% of their available time maintaining this system. This is impacting the Kennewick IT group with competing demands for space, capacity and resources.
 - BIPIN RMS application support is requiring multiple resources to support as the data conversion is not yet complete. This is a complex application requiring extensive coordination of operational functions and project resources.

End User Support

Quality of Help Desk, Satisfaction with End Users, Help Desk Software, Customer Support Staffing

Quality of Customer Service

- Overall, the quality of IT customer service is above average. Apart from a few areas, City staff were relatively pleased with the quality of service they receive from IT.
- Help Desk support is strong with level 1 support resolving most of the minor issues and triaging to level 2 & 3 support with more complicated ones.
- This overall satisfaction with IT support is unexpected due to limited resources in the department and confirms the strong management leading the Service Desk group.

Service Desk Staff

- The current IT organization chart does have a specialized Service Desk division that is comprised of a manager, help desk tech, and help desk tech II totaling 2 staff.
- Based on the findings in the previous section, the staffing levels for service desk techs is slightly low and IT should add one (1) more FTE in this role. This would also help relieve number of tickets per available service desk tech to the optimal amount of 1755, which would allow staff to meet workload for end-users.

- This FTE would be responsible for level 1 support and document the process for issue triage resolution.

Communication with End Users

- End users have multiple ways to communicate their issues.
- They can call-in, email or submit tickets for their problems and City staff commented that they appreciate the options that work best for them; this greatly improves the quality of service in IT.

Areas of Improvement

- Even though end user are relatively satisfied with the end user support, there are a few areas the City could consider for improvement:
 - Business Analyst to help with guidance configuring systems and identifying gaps to optimize the software. Documentation should also be created to implement standards and KPIs (Key Performance Indicators) for ticket resolution to have accountability in the Help Desk.

Staff Development

Systems Training, Onboarding Training, Recurring Training

Current IT Department Organization Chart

- Kennewick's investment in recurring training for IT falls within the average, as shown in their annual training budget. The allocation for IT staff members is \$2,364, slightly above the \$2,125 benchmark.
- Training is important as it shows the importance of staff development within the organization, and IT should strive to improve internal training.
- Because of the support needs of the business, it is difficult for staff to make time in their schedules for traditional classroom training that takes them out of the office.
- Since the staff are all mature within the organization, there has not been a need to formalize on-boarding training. This will change as the staff increase over the next several years.
- Staff members have not been cross-trained between areas to ensure continuity if someone leaves. This provides employees with the opportunity to be ready if a job function needs to be filled (e.g., vacation).

Considerations

- Education/certifications would help IT staff to further their job knowledge. Ensure certifications are chosen that relates to their individual job function.
- Ensure that staff have access to training material and experienced staff to assist them in learning the process. Implement an improvement program to increase proactive training.
- Consider developing a training approach for each area to be trained become designated experts in an application who can support advanced end-users.
- Attend conferences annually to engage and learn with other municipal IT departments throughout the country. This will promote collaboration and teamwork.

Organizational Structure

Current Organization Structure, Functional Groupings, Current Technology Demand, Future Technology Growth

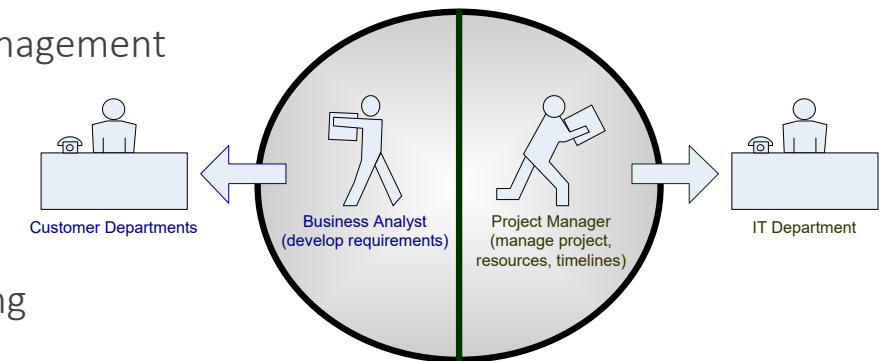
Municipal IT Organizational Structures

Today, Information Technology organizations have both internally-facing and externally-facing components. The internally-facing ones are traditional and comprised of the following functions:

- Applications services, managing the configuration and deployment of off-the-shelf systems, and development of in-house solutions
- Infrastructure management, managing systems administration and network management
- Telecommunications, managing wired and wireless phones

The externally facing components are:

- Customer service, including end-user support, help desk, and training
- Planning, including project management, business analysis and strategic planning



Historically, IT organizations have had customer-facing resources in the form of help desks. However, this function is designed to be reactive and to act as a gatekeeper to the level 2 resource that can solve all but the most basic issues.

Customers are looking for much more from IT organizations today. They want information and guidance. Most importantly, they want a business analyst that speaks the language of technology, act as an advocate for the customer (i.e., represent the customer department's business and technology needs) within IT, and act as advocate for IT (i.e., technology planning, standards, protocols, integrate-able systems) within the customer departments. The business analyst meets regularly with his/her customer department to gather business and technology requirements, help develop plans and update the customers on IT's plans and progress.

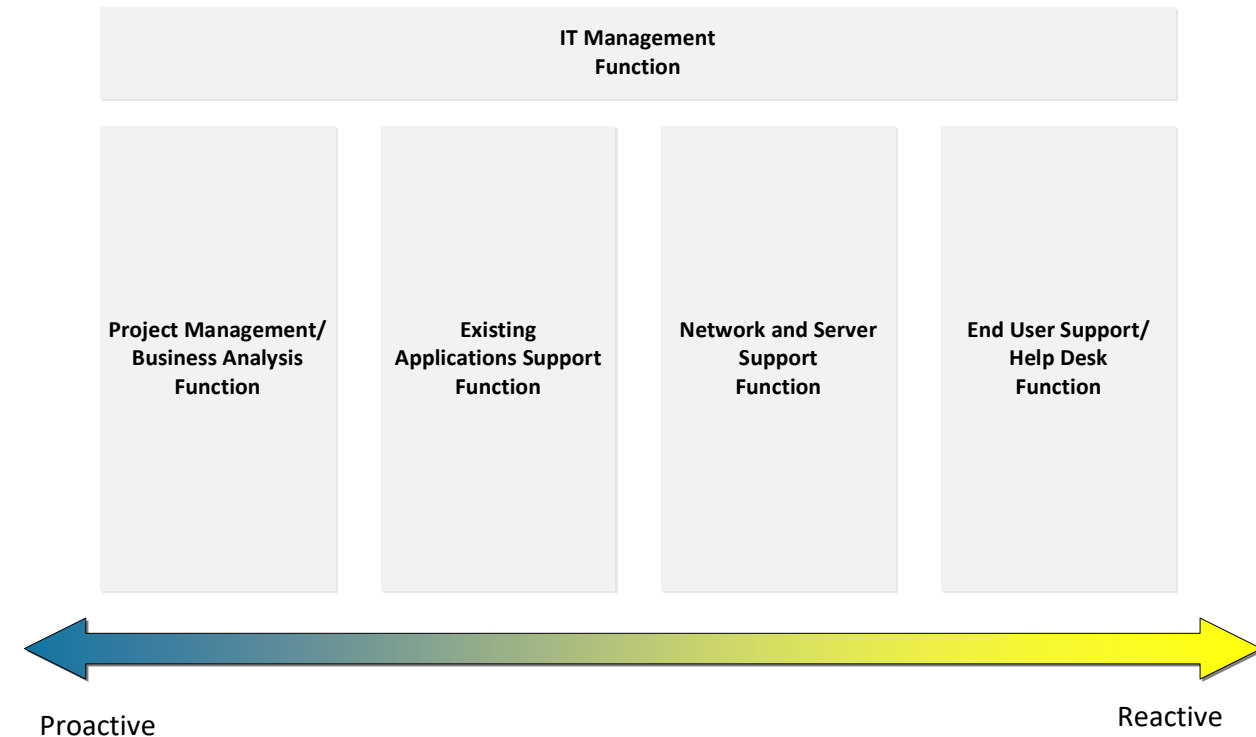
Organizational Structure

Current Organization Structure, Functional Groupings, Current Technology Demand, Future Technology Growth

Ideal Organizational Structure

In order to maintain an effective information technology infrastructure, and develop digital government capabilities, the organizational design of the information technology organization must reflect the demands of its customers. The IT Department should be designed to provide customer support to the Departments at two levels:

- Strategic, Proactive – Driven by business analysts and project managers within the IT Department and working with the departments to ensure that their needs are communicated to the IT Department and solutions are crafted within the framework and standards adopted by the IT Department.
- Tactical, Reactive – Coordinated by Help Desk, support requests are responded to in a tiered, structured manner in order to ensure that all calls are handled in a timely manner based upon their urgency to the City, and that limited, critical Applications and Infrastructure resources are only engaged once Help Deck has triaged issues and clarified the need.



Organizational Structure

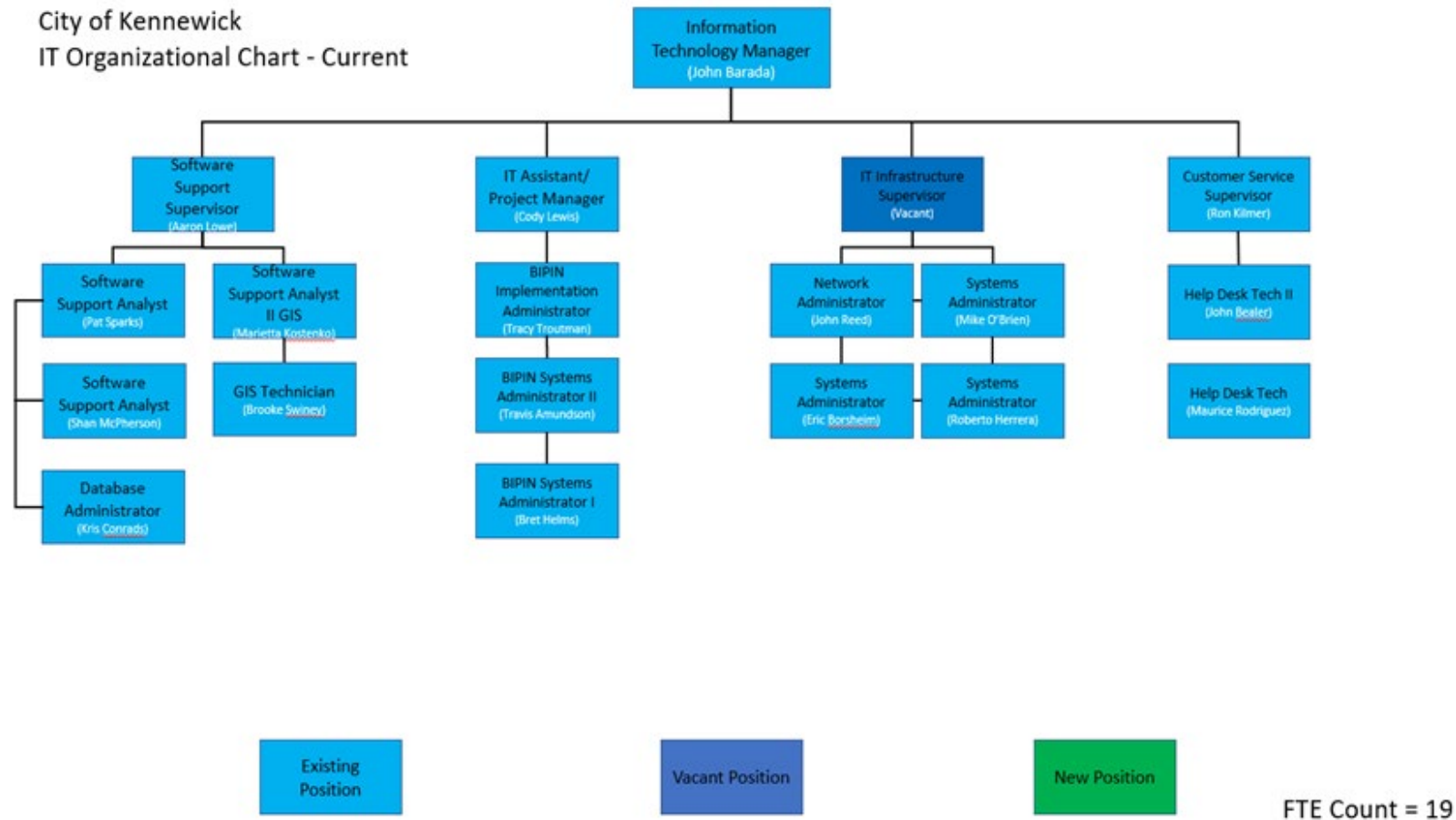
Current Organization Structure, Functional Groupings, Current Technology Demand, Future Technology Growth

Current IT Department Organization Chart

- The organization has undergone significant organizational changes over recent years. The shift in overall attitude has led to a more positive City environment, while direction and accountability are clearly defined.
- The overall structure of the IT Department reflects an externally focused organization, that is well balanced and where technology and the customer are central to its purpose.
- The structure does effectively segregate specific job functions (e.g., end-user support is distributed throughout the various organizational areas) with effective way of doing business and distributing tasks.
- There is overall structure and dedicated Help Desk in the organization. This critical function is responsible of handling all the service requests that come through IT
- With this current structure in place, level 1 issues (e.g., resetting a password) are separated from level 2 issues (e.g., major system failure). However, according to benchmarks, the department is short 1 Help Desk FTE. This limits the effectiveness of the segregation of level 1 from level 2 leading to increased reactive response throughout the organization.
- The only major area that is lacking with the current structure is Project Management/Business Analyst; while the department does have a Project Manager, workloads do not allow time for in-depth reviews of business processes. A Business Analyst would be able to handle department technology initiatives and maximize utilization of the newly implemented systems. Succession planning will need to be considered as the IT Manager is eligible for retirement in 2025 and other IT staff are coming eligible I the next five years.
- Succession planning will need to be considered as the IT Manager is eligible for retirement in 2025 and other IT staff are coming eligible in the next five years.

Organizational Structure

Current Organization Structure, Functional Groupings, Current Technology Demand, Future Technology Growth



Organizational Structure

Current Organization Structure, Functional Groupings, Current Technology Demand, Future Technology Growth

IT Department Transitional Organization Recommendations

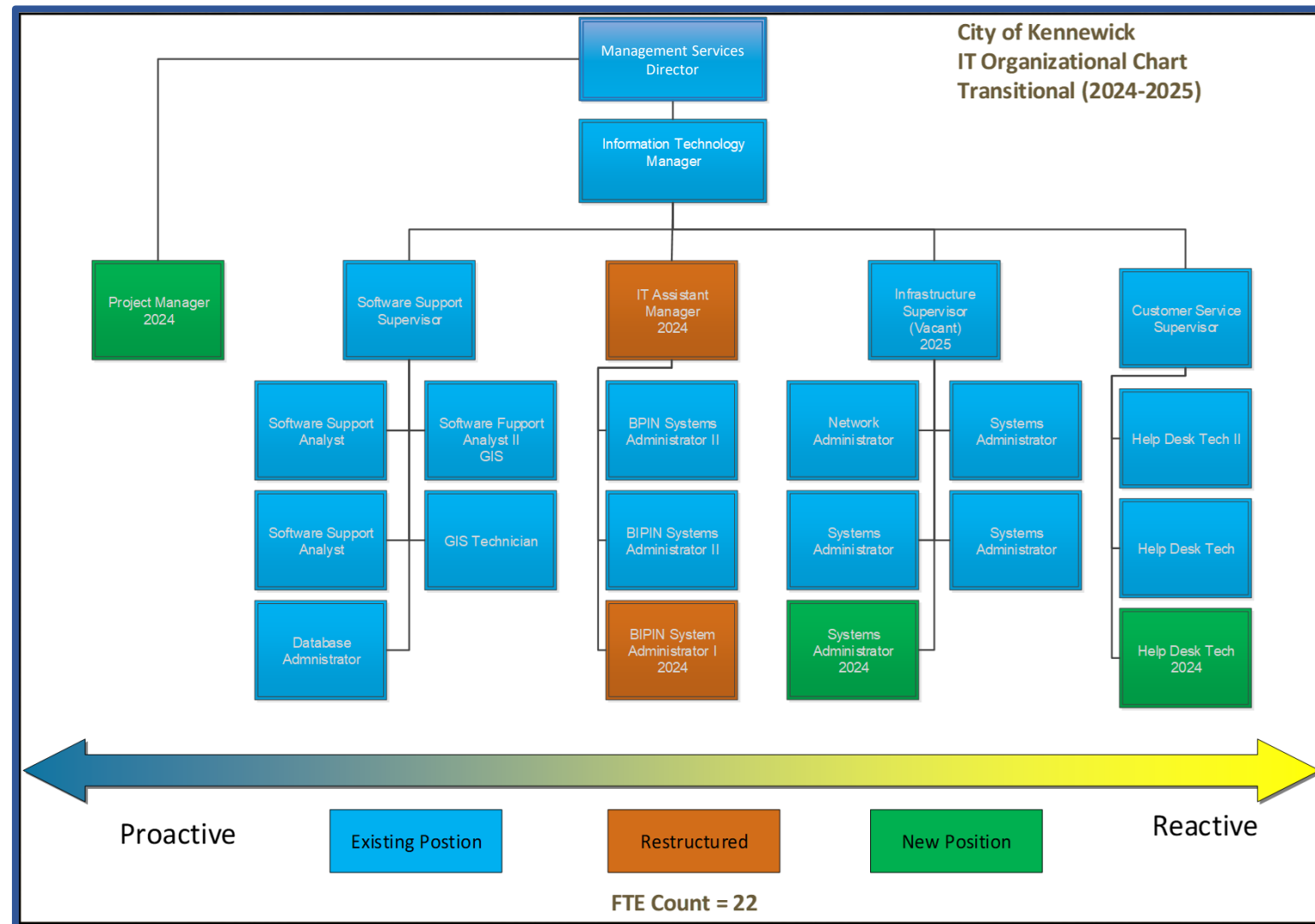
In order to mitigate limitations and risks of insufficient resources and staffing retirements the City needs to:

- Fill the open Infrastructure Supervisor position.
- Add an additional System Administrator in the infrastructure section.
- Promote IT Assistant Manager to IT Manager and eliminate IT Assistant Manager position.
- In preparation for the upcoming retirement of the IT Manager, conduct transition planning, knowledge transfer and create documentation of any network, hardware, budget, or application support processes that are directly linked to the position.
- Add a Project Manager to take over the project management tasks of the promoted IT Assistant Manager.
- Restructure the BIPIN Project Administrator position to BIPIN Administrator 1 to better support the technical needs to the BIPIN system.
- Add a new Business Analyst position to address the continuous functional improvement needs of the department.

The City needs to work up and build a team that will eventually resemble the final organizational chart. During this time, the City will need to address the risks of vital senior staff retirement and lack of overall resources with the restructuring of key positions and the hiring and training of new essential staff.

Organizational Structure

Transitional Organization Structure, Functional Groupings, Current Technology Demand, Future Technology Growth



Organizational Structure

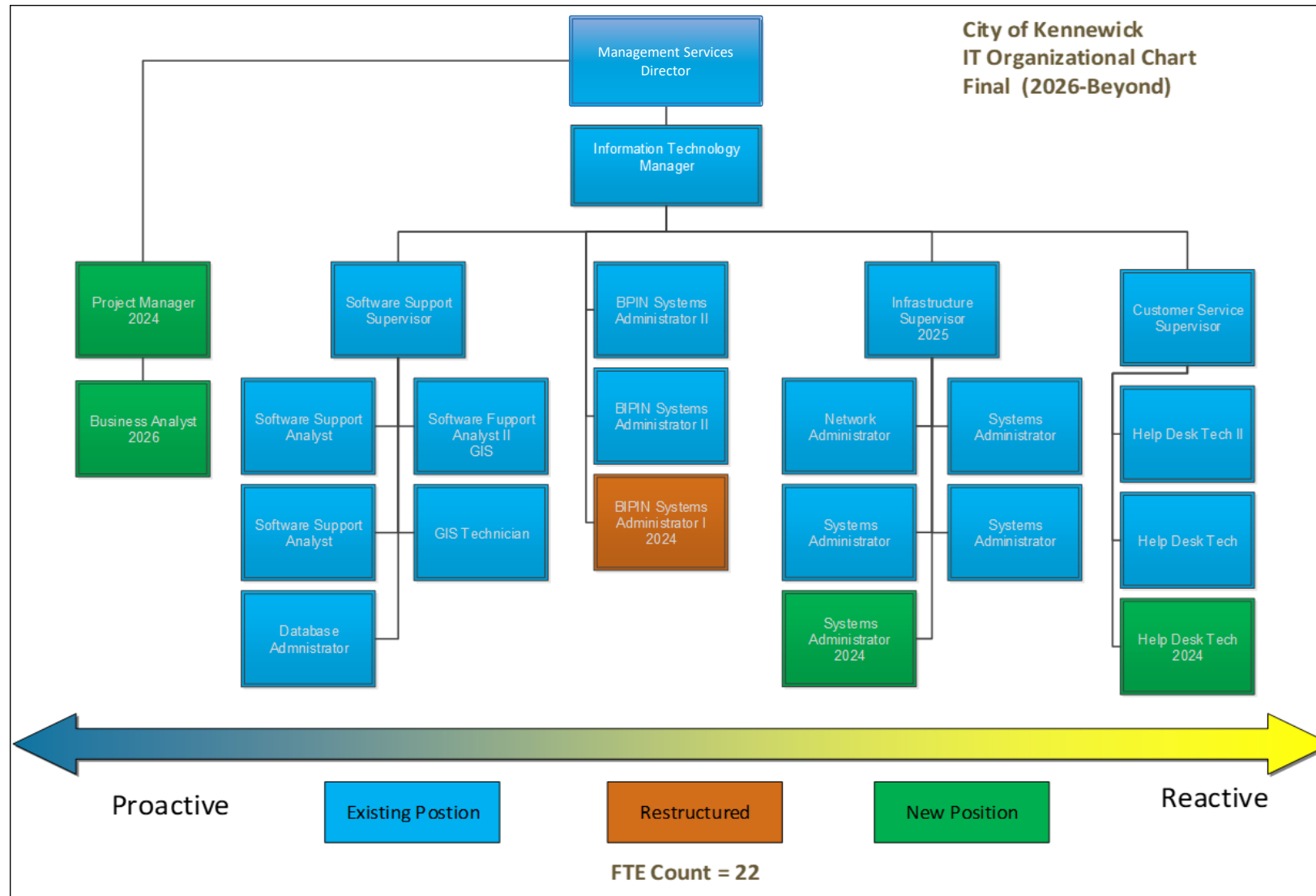
Future Organization Structure, Functional Groupings, Future Technology Demand, Future Technology Growth

IT Department Organization Recommendations

- Pictured on the next page is our recommendation for the Future IT Organization Chart for the City of Kennewick.
- The additional staff provides the needed resources to reduce organizational reactivity, retirement risk as we all improve the department's ability to better support applications deployments.
 - Infrastructure Supervisor
 - Systems Administrator (Infrastructure)
 - Help Desk Technician
 - Project Manager (Applications)
- The restructured BIPIN Administrator position allows the department to better support BIPIN technical needs.
- The addition of a Business Analyst will allow the department to become the knowledge base and liaison with end user departments for all technology projects in the City.

Organizational Structure

Future Organization Structure, Functional Groupings, Future Technology Demand, Future Technology Growth



Technology Resources

Security Analyst

- Employment of information security analysts is projected to grow 35 percent from 2021 to 2031, much faster than the average for all occupations. About 19,500 openings for information security analysts are projected each year, on average, over the decade.
- High demand is expected for information security analysts. Cyberattacks have grown in frequency, and these analysts will be needed to create innovative solutions to prevent hackers from stealing critical information or creating problems for computer networks.

Project Manager

- Local, and Municipal governments are increasing resources to meet pent-up technology demand coming out of Covid-19 pandemic budget constraints. As organizations seek ways to maintain and improve productivity, employment of project management specialists is expected to increase.
- About 70,400 openings for project management specialists are projected each year, on average, over the decade.
- As organizations seek ways to maintain and improve productivity, employment of project management specialists is expected to increase. These specialists will be needed to help manage various business operations, ensuring that projects meet their goals and are completed on time and within budget.
- Demand for project management specialists is expected to be strong in computer systems design services. More project management specialists will be needed to manage the growing volume and complexity of information technology (IT) projects required to support expanded telework.

Technology Resources

Computer Support Specialist

- About 75,000 openings for computer support specialists are projected each year, on average, over the decade. Demand for computer and information systems managers will grow as organizations increasingly rely on information technology (IT) services and require these workers to plan and oversee computer hardware and software needs.
- Computer support specialists will be needed to provide technical help to end users as well as support needed for projects that are directly impacted by change as organizations continue to upgrade/replace hardware and software systems.

System Administrator

- Employment of computer and information systems managers is projected to grow 16 percent from 2021 to 2031, faster than the average for all occupations.
- About 48,500 openings for computer and information systems managers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.
- Demand for computer and information systems managers will grow as organizations increasingly rely on information technology (IT) services and require these workers to plan and oversee computer hardware and software needs.
- Employment growth is projected to result from the need to bolster cybersecurity in computer and information systems that businesses use. As cybersecurity threats increase, implementing more robust security policies will be especially critical for organizations that manage sensitive information.

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Technical Risk Assessment Details

Infrastructure		
Function	Finding	Best Practices
Perimeter Defense		
Does the organization use firewalls or other network-level access controls at network borders to protect Internet-facing services on the network?	Yes	Firewalls are a first-line defense mechanism and should be placed at all network border locations. Rules implemented on firewalls should be highly restrictive and set on a host-by-host and service-by-service basis. When creating firewall rules and router ACLs (Access Control Lists), focus on first protecting access control devices and the network from attack. + Enforce data flow by use of network ACLs and firewall rules. + Test firewall rules and router ACLs to determine whether or not existing rules contribute to Denial of Service (DoS) attacks. + Deploy one or more DMZs as part of a systematic and formal firewall development. + Place all Internet accessible servers there. Restrict connectivity to and from the DMZs.
Does the organization use host-based firewall software to help protect servers?	Yes	Consider deploying an anti-virus solution to critical file servers initially and then to e-mail, database, and web servers. If you are using Microsoft Exchange, consider using the additional anti-virus and content-filtering capabilities at the mailbox level.
Does the organization use intrusion-detection hardware or software to help identify attacks?	Yes	Both network- and host-based intrusion-detection systems should be deployed to detect and notify of attacks against corporate systems.
Are anti-virus solutions implemented in the environment?	Yes	Deploy anti-virus solutions throughout the environment on both the server and desktop levels. Deploy specialized anti-virus solutions for specific tasks such as file server scanners, content screening tools, and data upload and download scanners. Configure anti-virus solutions to scan for viruses both entering and leaving the environment. Anti-virus solutions should be implemented first on critical file servers and then extended to mail, database, and Web servers. For desktops and laptops an anti-virus solution should be included in the default build environment. If you are using Microsoft Exchange, use the additional anti-virus and content filtering-capabilities it offers at the mailbox level.
Is remote access to the network available?	Yes	Workstations are a critical factor in the defense of any environment, especially if there are remote and roaming users that connect to the environment. Tools such as personal firewalls, anti-virus, and remote-access software should be present and properly configured on all workstations. Implement a policy which requires periodic review of these tools to make sure their configurations reflect changes in applications and services being used, but at the same time still keep the workstation resistant to attacks.
Does the network have more than one segment?	Yes	Use segmentation to separate specific extranets from vendor, partner, and customer access. Each external network segment should allow only specific application traffic to be routed to the specific application hosts and ports that are used to supply services to customers. Ensure that network controls are in place to restrict access to only what is required for each third-party connection. Restrict access to and from the network services being provided and restrict access between network segments.
Is wireless connectivity to the network available?	Yes	Best practice for wireless implementation should include ensuring that the network does not broadcast its SSID; that WPA encryption is used; that the network is fundamentally treated as untrustworthy.

Technical Risk Assessment Details

Infrastructure		
Function	Finding	Best Practices
Authentications		
Are password policies used on various types of accounts such as for administrative accounts, a strict policy that requires the use of complex passwords?	Yes	Both network- and host-based intrusion-detection systems should be deployed to detect and notify of attacks against corporate systems. For administrative accounts, implement a strict policy that requires the use of complex passwords that meet the following criteria: + Alphanumeric + Upper and lower case + At least one special character + Minimum length of 14 characters. To further mitigate the risk of a password attack, implement the following controls: + Password expiration + Account lockout after 7 to 10 failed login attempts + System logging. In addition to implementing complex passwords, consider implementing multifactor authentication. Implement advanced controls around account management (do not allow account sharing) and account-access logging.
Does the organization have processes for reviewing inactive administrative, internal use, vendor and remote user accounts?	Yes	The use of complex passwords for all accounts is a basic element of Defense-in-Depth. Complex passwords should be 8 to 14 characters in length, with alphanumeric and special characters. Minimum length, history maintenance, lifetime, and pre-expiration of passwords should all be set to provide additional defenses. In general, password expiration should be set to the following: + Maximum length 90 days + New accounts must change password at login + Password history of 8 passwords (8 days minimum). In addition to complex passwords, multifactor authentication is important, especially for administrative and remote user accounts. Account lockout, after 10 failed login attempts, should be enabled on all user accounts. The controls around account lockout can vary from simply being focused on blocking brute-force password attacks to requiring administrator intervention to unlock. It is considered a best practice to enable lockout for administrative accounts, at least for network access. This would not allow the account to be locked out at the console, only from across a network. This may not be appropriate for all organizations, especially those with remote locations. For remote-access accounts, it is best to require an administrator to unlock the account, as attacks could remain undetected for a significant amount of time if other means are not being used to track authentication failures. Consider the following guidelines when implementing controls around account lockout: + Lockout after 7 to 10 failed login attempts for administrative and remote-access accounts + Lockout after at least 10 failed login attempts for regular user accounts + Require administrative access to re-enable for administrator and remote-access accounts and automatically re-enable regular user accounts after 5 minutes.
Management and Monitoring		
Does the organization configure its systems by the hardware supplier/reseller?	Yes	To help reduce the risk of exposure, formal policies and procedures should exist to govern relationships with third parties. These policies and procedures help to identify security issues and the responsibilities of each party in mitigating them. These policies should include: + Level of connectivity and access + Data presentation and manipulation + Roles and responsibilities (including authority) of each party + Management of the relationship—setup, ongoing, and termination. Formal policies and procedures for all different types of the third-party relationships should be developed and agreed upon across the organization. Involve the various business teams responsible for the relationships while framing these policies. Well-developed policies will reduce the organization's risk of exposure.

Technical Risk Assessment Details

Infrastructure		
Function	Finding	Best Practices
Management and Monitoring		
Are workstations and laptops builds based on either an image or a formal documented configuration?	Yes	Implement a documented build process for infrastructure devices and ensure that the build is kept current as new patches are released.
Are servers built based on either an image or a formal documented configuration?	Yes	Implement a documented build process for infrastructure devices and ensure that the build is kept current as new patches are released.
Does the server configuration include "host hardening"?	No	Consider hardened security templates with Group Policies.
Which of the following solutions have been installed on employee workstations and laptops?		
Personal Firewall/Spyware detection and removal software	Yes	Implement a policy which calls for periodic review of default firewall settings, so as to allow for changes in applications or services being used.
Disk Encryption	No	Consider using disk encryption software in order to prevent data compromise in the event of machine theft.
Remote Control/Management Software	Yes	Consider deploying remote access client software on all individual workstations, if remote connectivity is required. Configure the client software to match the remote access server policy.
Password protected Screen Saver	Yes	Consider requiring all users to have a password-protected screen saver with a short time-out period.
Have physical security controls been deployed to secure the organization's assets?		
Network Equipment	Yes	Networking equipment should be secured in a locked room or closet. Plan to migrate network equipment to a more secure area. Having network equipment in a lockable cabinet/rack further protects against unauthorized tampering. If possible, consider migrating network equipment to lockable enclosures.
Servers stored in a secure location	Yes	Having servers in a lockable cabinet/rack further protects against unauthorized tampering. If possible, consider migrating servers to lockable enclosures.
Are access controls (employee and visitor badges, visitor escorts, visitor logs, entrance controls) implemented?	Yes	Institute physical access controls to guard against unauthorized persons gaining access to the building and to sensitive information. Consider reassessing all physical access controls to ensure they are adequate and are being complied with. Increase staff awareness of the personnel access control policy and encourage the challenging of unrecognized individuals.
Does the organization have formal incident response procedures?	No	Institute procedures for the reporting of and response to security incidents, issues, and concerns. Designate an emergency response team that includes representatives from several disciplines including technology, human resources, and legal for responding to all security incidents and issues. Consider implementing a full incident response program that includes incident response teams, containment management, event correlation and analysis, and incident response procedures.

Technical Risk Assessment Details

Applications		
Function	Finding	Best Practices
Deployment and Use		
Are Line of business (LOB) applications used (e.g. Finance, HR, Public Works)?	Yes	Any Line of Business applications should be periodically evaluated for security, backed up regularly, fully documented, and has contingencies in place in case they fail.
Are custom macros used for Office applications (such as Word, Excel, or Access)?	Yes	Macros are usually written in Visual Basic which may be used for malicious applications. Using custom macros requires that the security settings in Office are downgraded, exposing your office applications to malicious documents. Consider limiting the ability to develop and run custom macros to only those that have a business need.
What mechanisms are in place to ensure high availability of applications? Select all the mechanisms that are deployed from the list below:		
Load Balancing	Yes	Consider deploying hardware load balancers in front of the Web servers to achieve higher availability. The load balancer shows a single (virtual) IP address to the outside world, which maps to the addresses of each Web server in the cluster.
Clustering	Yes	To ensure high availability for critical databases and file shares, consider deploying clustering mechanisms.
Regular testing of Application and data recovery	No	Consider implementing an off-site storage policy for backup media and a policy for frequent rotation of this media.
Have third-party vendors developed any of the key applications deployed in your environment?	Yes	The third-party independent software vendor (ISV) should regularly provide patches and upgrades for their application, and they should explain the purpose of patches and any impact you may expect in terms of the functionality, configuration, or security of the application being patched. The third-party ISV should clearly identify critical patches so that they can quickly be applied. The third-party ISV should explain all of the application's security mechanisms and provide up-to-date documentation. The organization should be aware of any configuration requirements necessary to ensure the highest level of security.
Password protected Screen Saver	Yes	Consider requiring all users to have a password-protected screen saver with a short time-out period.
Has an in-house team developed any of the key applications deployed in your environment?	Yes	The in-house development team should regularly provide patches and upgrades for their application, and they should explain the purpose of patches and any impact you may expect in terms of the functionality, configuration, or security of the application being patched. The development team should clearly identify critical patches so that the organization can quickly apply them. The development team should explain all of the application's security mechanisms and provide up-to-date documentation. The organization should be aware of any configuration requirements necessary to ensure the highest level of security. Consider contracting with an independent third party to review the application's architecture and deployment and identify any security issues of concern.

Technical Risk Assessment Details

Applications		
Function	Finding	Best Practices
Deployment and Use		
Is security training provided for the development and testing staff?	Partial	Develop a plan initially for the IT team and development engineers as needed based on your business model to attend appropriate security related training. Jumpstart the plan by having the team attend external training in the form of seminars and topic-specific security training. Draft plan to include some basic level of training for all employees in future.
Application Design		
Do controls exist to enforce password policies in key applications?	Yes	The use of strong passwords is a basic element of Defense-in-Depth. Strong passwords should be 8 to 14 characters in length, with alphanumeric and special characters. Minimum length, history maintenance, lifetime, and pre-expiration of passwords should all be set to provide additional defenses to password strength. In general, password expiration should be set to the following: + Maximum length 90 days + New accounts must change password at login + Password history of 8 passwords (8 days minimum) Administrative access to systems should be protected with the strongest forms of authentication available. Typically, the restrictions around password creation for administrators should be greater than those for normal accounts—if normal accounts require a password length of 8 characters, then administrative accounts should have 14-character passwords. Account lockout, after 10 failed login attempts, should be enabled on all user accounts. The controls around account lockout can vary from simply being focused on blocking brute-force password attacks to as complex as requiring administrator intervention to unlock. Consider the following guidelines when implementing controls around account lockout: + Account lockout after at least 10 failed login attempts for user accounts + Require administrative access to re-enable accounts for critical applications and automatically re-enable regular user accounts after 5 minutes for other applications + 30-minute length to cache failures for regular user accounts
Password Controls include:		
Password Policy	Yes	It is important to implement a policy for password controls. All external applications and critical internal applications that handle sensitive data should have password policies. Consider implementing a policy that requires complex passwords, password expiration, and account lockout after at least 10 failed login attempts
Complex Passwords	Yes	Consider implementing strong password controls for all applications. A password is considered to be strong if it meets the following criteria: + Alphanumeric + Upper and lower case + At least one special character + Minimum length of 8 characters
Password Expiration	Partial	Consider implementing password expiration for all types of accounts for critical applications based on the guidelines mentioned in the Best Practice column. In general, password expiration should be set to the following: + Maximum length 90 days + New accounts must change password at login + Password history of 8 passwords (8 days minimum)

Technical Risk Assessment Details

Applications		
Function	Finding	Best Practices
Application Design		
Account Lockout	Yes	Think about implementing account lockout (after 10 failed attempts), initially for all critical external applications. The controls around account lockout can vary from being focused on blocking brute-force password attacks to as complex as requiring administrator intervention to unlock the account. Consider the following guidelines when implementing controls around account lockout: + Lockout after 10 failed login attempts + Require administrative access to re-enable accounts + 30 minute length to cache failures for regular user accounts
Authentication Method Include:	Yes	Applications should implement an authorization mechanism that provides access to sensitive data and functionality only to suitably permitted users or clients. Role-based access controls should be enforced at the database level as well as at the application interface. This will protect the database in the event that the client application is exploited. Authorization checks should require prior successful authentication to have occurred. All attempts to obtain access without proper authorization should be logged. Conduct regular testing of key applications that process sensitive data and of the interfaces available to users from the Internet. Include both "black box" and "informed" testing against the application. Determine if users can gain access to data from other accounts.
Do key applications in the environment have mechanisms enabled to restrict access to sensitive data and functionality?	Yes	Work with the application vendor (ISV or in-house development team) to implement authorization and access control mechanisms within the application, initially for critical external applications and then internal applications. Authorization functionality enables administrators to group users into roles, and define specific permissions for each role. Based on verification of credentials users are allowed to access data based on assigned privileges.
Do key applications in the environment record messages in log files for analysis and auditing purposes?	No	Logging should be enabled across all applications in the environment. Log file data is important for incident and trend analysis as well as for auditing purposes. The applications should log failed and successful authentication attempts, changes to application data including user accounts, severe application errors, and failed and successful access to resources. When writing log data, the application should avoid writing sensitive data to log files.
Events Logged Include:		
Failed Authentication Attempts	Yes	Consider logging failed authentication attempts in order to be able to detect brute-force attacks.
Successful Authentications	Yes	Consider logging successful authentications in order to track user activity.
Application Errors	Yes	Consider logging application errors in order to be able to troubleshoot and detect any Trojan horses or malicious code.
Access Denied To Resources	No	Consider logging access denied to resources in order to be able to detect attempts at privilege escalation.
Successful Access to Resources	No	Consider logging successful access to resources in order to trace malicious behavior after the fact.
Changes To Data	No	Consider logging changes to data in order to track malicious activity.
Changes to User Accounts	Yes	Consider logging changes to user accounts in order to detect privilege escalations and unauthorized new account creations.

Technical Risk Assessment Details

Applications		
Function	Finding	Best Practices
Application Design		
Is input data validated by the deployed applications?	Yes	The application may accept input at multiple points from external sources, such as users, client applications, and data feeds. It should perform validation checks of the syntactic and semantic validity of the input. It should also check that input data does not violate limitations of underlying or dependent components, particularly string length and character set. All user-supplied fields should be validated at the server side.
Data Storage and Communications		
Do key applications encrypt sensitive and business critical data that they process?	No	Sensitive data should be encrypted or hashed in the database and file system. The application should differentiate between data that is sensitive to disclosure and must be encrypted, data that is sensitive only to tampering and for which a keyed hash value (HMAC) must be generated, and data that can be irreversibly transformed (hashed) without loss of functionality (such as passwords). The application should store keys used for decryption separately from the encrypted data. Sensitive data should be encrypted prior to transmission to other components. Verify that intermediate components that handle the data in clear-text form, prior to transmission or subsequent to receipt, do not present an undue threat to the data. The application should take advantage of authentication features available within the transport security mechanism.

Technical Risk Assessment Details

Operations		
Function	Finding	Best Practices
Environment		
Does the organization use dedicated management hosts for secure administration of systems and devices within the environment?	Yes	When management packages are used, the administrative consoles should be hardened and physically secured. Harden the management workstations used to manage the network servers and devices. Use SSH or VPN connections to protect clear-text protocols. Test all management systems that utilize SNMP to ensure that they are patched to the latest version and do not use default community strings. Shared systems do not store any management-specific data. Shared workstations are not used to administer network devices or hosts.
Are separate login accounts used for normal activity vs. administrative/management activity?	No	Management workstations should be dedicated to specific network and host administrators.
Does the organization grant users administrative access to their workstations and/or laptops?	No	Consider deploying separate management workstations to administer the network servers and devices over a secure protocol. Use SSH or VPN for securing clear text management protocols. The management workstations must be hardened, and strong password controls implemented based on host system and management application capabilities.
Is the firewall tested regularly to ensure it performs as expected?	Yes	Test Firewall regularly
Does the organization maintain Disaster Recovery and Business Resumption Plans?	No	Maintain and test disaster recovery / business resumption plans.
Security Policy		
Does a model exist for assigning criticality levels to each component of the computing environment?	No	Assigning criticality levels to each component of the computing infrastructure allows for the most resources to be applied to those determined to be most critical, with those less critical systems receiving less resources. Consequently scarce security resources are most efficiently applied to those systems that need them the most.
Does an information security policy exist to govern the security-related activity of the organization?	Yes	
Is the security team involved at all stages of the technology lifecycle for all projects?	Yes	The security team should be involved at all stages of the technology lifecycle, for all projects.
Do policies exist for individual user account management?	Yes	Individual user accounts should be created for all persons needing access to IT resources. Accounts should not be shared among users. By default, accounts should be created with the minimum required privileges enabled. Network and server administrators should have privileged (administrator) as well unprivileged accounts. Password strength should be enforced and regularly audited and all account modifications should be logged. As an individual's role changes, all account privileges should be reviewed and modified as necessary. When employment is terminated, all accounts should be disabled or removed.

Technical Risk Assessment Details

Operations		
Function	Finding	Best Practices
Security Policy		
Are any of the following policies being applied towards individual user account management:		
Individual user accounts (accounts are not shared)	Yes	The sharing of login accounts should be expressly forbidden by policy.
Privileged and unprivileged accounts for administrators	Yes	Administrators should be required to use unprivileged accounts for regular work, and only use privileged accounts when needed.
Enforce password strength	Yes	Policy should define a minimum password strength, which should then be enforced by the authentication mechanism.
On employee exit, accounts are disabled	Yes	To protect against malicious ex-employees, all accounts should be immediately disabled on exit.
Do policies exist to govern the computing environment?	Yes	Policies are rules and practices that specify how the computing environment can be properly used. Without any policies, there is no mechanism to define or enforce controls in the environment. Immediately plan to develop the necessary policies in accordance with applicable standards and organization management.
Do documented guidelines exist that govern which protocols and services are allowed on the network?	No	Clearly document the standards and practices regarding which protocols and services are allowed by the organization. Access-control lists should be verified to ensure that all services allowed have a business need for the level of access granted. Identify specific IP addresses/ranges wherever possible. Servers should have their services limited to only those required by the business need. Specifics for protocol version and minimum encryption strength should also be stated in these guidelines. Enforce accepted protocol usage through the use of perimeter devices (routers, gateways, firewalls, etc.), strong authentication, and encrypted communications.
Does the organization have a formal, well-documented process for the disposal of data on electronic media and hardcopy form?	Yes	Formal procedures should exist so that all users know the proper practices for disposing of electronic and hardcopy information. By not providing guidance and processes for securely destroying information, the confidentiality of information could be compromised.
Does a formal policy exist to govern third-party relationships	Yes	To help reduce the risk of exposure, formal policies and procedures should exist to govern relationships with third parties. These policies and procedures help to identify security issues and the responsibilities of each party in mitigating them. These policies should include: + Level of connectivity and access + Data presentation and manipulation + Roles and responsibilities (including authority) of each party + Management of the relationship—setup, ongoing, and termination. Based on business needs, either self-management or outsourcing can be viable solutions. If the management is outsourced, security requirements should be addressed in the contract, and service-level agreements (SLAs) used to enforce compliance with those requirements.
Does the organization have a data classification scheme with associated data protection guidelines?	No	It is important to have a data classification scheme with corresponding data protection guidelines. Insufficient information “classification” and segregation can allow staff, business partners, or the public access to information that is sensitive or that they do not have a “need-to-know.” This could lead to unauthorized disclosure of sensitive information. Scarce resources used to secure information may also be misallocated without proper information classification.

Technical Risk Assessment Details

Operations		
Function	Finding	Best Practices
Patch and Update Management		
Does a configuration management process exist?	Partial	Any changes to the production environment should first be tested for security and compatibility before being released into production, and full documentation should be kept of the configuration of all production systems.
Do accurate logical diagrams and supporting configuration documentation exist for the network infrastructure hosts?	Partial	Current and accurate physical and logical diagrams of the external and internal networks should always be available. Work with the network engineering group to have external network diagrams developed first. Then work on developing diagrams for the internal network.
Does an established patch and update policy and process exist?	Yes	Security patches and configuration changes should be deployed in a timely fashion (defined by corporate security policy) from when they become available. Whether developed internally or supplied by a third-party, patches and updates should be thoroughly tested in a lab environment before being rolled into production. Additionally, each system should be tested after the patch has been applied to identify conflicts which are unique to that system and may require rollback of the patch.
Does an established policy exist to govern the updating of signature-based detection products?	No	New viruses are constantly being released, and it is imperative to maintain an updated virus-signature list. Your anti-virus solution is only as effective as the virus-signature list will allow.
Do accurate application architecture and data flow diagrams exist for key applications?	No	Application architecture diagrams should depict major components and data flows that map the flow of critical data through the environment, including the systems through which the data passes and how the data is manipulated. As changes are made to the application or the environment that hosts the application, the diagrams should be updated in a timely manner. Work with respective business owners to first prioritize external applications and then any internal applications. When prioritizing applications consider the critical and sensitive nature of the data it handles Application Data Flow Based on the assigned priority, work with the application architecture team and respective business owners to complete the architecture and data flow diagrams for external applications and then any internal applications. Consider setting up a policy for updating these diagrams when changes are made to the environment
Backup and Recovery		
Is logging enabled in the environment to record events on hosts and devices?	Yes	Log files are configured to allow for recording all planned activity without overwriting entries. An automated process should be set up to rotate log files on a daily basis and offload the logs to a secure server within the management network. Access to log files and configuration settings should be restricted to prevent modification and deletion. Log files should be reviewed regularly to ensure that suspicious or anomalous activity is identified. Review should include systems operation, maintenance, and security. Event correlation software and trend analysis should be used to enhance review capability.
Which measures are used to protect the information contained within logs?		
Operating system and applications are configured to not overwrite events	Partial	System dependent as it does impact service delivery on specific systems.

Technical Risk Assessment Details

Operations		
Function	Finding	Best Practices
Backup and Recovery		
Log files are rotated frequently to ensure sufficient space is available	No	Set up an automated process that rotates log files on a daily basis and offloads the logs to a secure server within the management network. Consider storing the log files in a database so that the security team can perform trend analysis and have access to protected logs in the event an incident occurs.
Access to log files is restricted to administrator-level accounts	Yes	Consider protecting all operating system log files and application log files on the servers in the DMZ and core networks by limiting file access permissions.
Logs are written to a centralized log server	Yes	Consider logging to a centralized log server in order to preserve data in case a production server is compromised.
Does the organization review log files regularly?	Yes	The security team should review the log files every day to look for suspicious or anomalous activities. Consider having the log files from the DMZ and core network servers monitored by a log Manager such as MOM (Microsoft Operations Manager). In the event of critical log-file entries being generated, the log manager will send alerts to the appropriate members of the team. We deployed a MDR that physically (security Engineers) monitors telemetry in real time and reports anomalies and suspected nefarious behavior 24/7/365.
Is critical and sensitive data backed up on a regular basis?	Yes	Full backups should be performed at regular intervals. If feasible, partial intermediary backups should be made between full backups. The backup strategy should address the worst-case scenario of a complete system and application restore. For critical applications, the restore process should result in a fully functioning application in minimal time.
Do policies and procedures exist for storage and handling of backup media?	Yes	Detailed policies should exist to govern the storage and handling of backup media. These policies should address issues such as: + Onsite/Offsite Storage + Media Rotation + Security Controls + Personnel Access Controls Removable backup media should be stored in locked, fire-proof cabinets and only authorized personnel should have access to these cabinets. Offsite storage locations should be used to offer greater recoverability in the event of disaster.

Technical Risk Assessment Details

Human Resources		
Function	Finding	Best Practices
Requirements and Assessment		
Is there an individual or group that is responsible for security?	Yes	The organization identifies individuals with subject-matter expertise in security to be involved in all security-related discussions and decisions. The organization identifies what it needs to protect based on the value of the asset, as well as the level of security needed to protect it.
Does the organization perform security assessments of the environment through independent third-parties?	Yes	Third-party assessments should be conducted to gain a valuable and objective view of an organization's security posture. Third-party assessments might also prove beneficial in meeting regulatory, customer, partner, and vendor requirements. Assessments should cover infrastructure, applications, policies, and audit procedures. These assessments should focus not solely on identifying vulnerabilities, but also on auditing for nonsecure configurations and extraneous access privileges. Security policies and procedures should be reviewed and evaluated for gaps
Does the organization perform security assessments of the environment internally?	No	Consider performing frequent security audits by internal staff, but augment these audits with input from a trusted third party.
Policy and Procedures		
Does the organization perform background checks as a component of the hiring process?	Yes	Background checks should be performed to identify any potential issues, thus reducing the risk exposure to the organization and to other employees. This step also helps identify any potential issues and gaps in the candidate's resume. The hiring process should include a review of the candidate's employment and legal history. A candidate's skills should be evaluated against detailed job descriptions and task requirements to understand strengths and weaknesses.
Does a formal employee exit process exist?	Yes	Formal exit procedures ensure that all the necessary steps are undertaken when an employment contract is terminated. These procedures should exist to handle both friendly and unfriendly employee exits. These procedures should include: + Notification to all departments—Human Resources, IT, Physical Security, Help Desk, Finance, etc. + Escorting the employee from the premises + Termination of all accounts and network access + Collection of company property—laptop, PDA, electronic media, confidential documents, etc.

Technical Risk Assessment Details

Human Resources		
Function	Finding	Best Practices
Training and Awareness		
Does a security awareness program exist?	Yes	A security awareness program helps employees contribute to a company's overall security posture by keeping them up-to-date on security risks. Knowledgeable employees are your best source for reporting security issues. An effective awareness program should take into account all aspects of security—including application, network, and physical—while providing clear guidelines for what employees should do if they witness things that appear to jeopardize the security of any of these elements. Implement policies that regulate employee usage of company resources. Awareness programs should be a part of new employee orientation. Updates and refresher courses should be conducted regularly to ensure all employees are aware of the most current practices and risks. Periodic testing should be implemented to ensure employees have absorbed the material. Consider implementing a formal security awareness program to keep employees informed about IT related security risks. Implement policies that regulate employee usage of company resources and technology and include security awareness as part of new employee orientation. Knowledgeable employees are your best source for reporting security issues.
Which of the following topics does the awareness training cover?		
Security policies and controls	Yes	Security awareness training should cover all aspects of security, including security policies and controls, reporting suspicious activity, privacy, e-mail security, Internet security, and computer security.
Reporting suspicious activity	Yes	
Privacy	No	
E-mail security, including spam and attachment handling	Yes	
Internet security, including web surfing and downloads	No	
Computer security, including use of personal firewalls and encryption	No	
Is subject-matter-related training offered to employees based on their roles in the organization?	Yes	Work with business owners to determine the acceptable downtime for critical applications. Based on those findings take appropriate measures to meet or even surpass those requirements. Availability and performance of Web-based applications is improved by deploying load balancers in front of the Web servers. To balance server load, a load balancer distributes requests to different nodes within a server cluster with the goal of optimizing system performance. If one Web server in a server cluster fails, then the request is directed to another server to handle the request, providing high availability. Determine acceptable downtime for critical file shares and databases from business owners. Test the failover mechanisms for the applications, and determine if the amount of downtime is acceptable. To minimize downtime, a clustering mechanism should be deployed. Each instance of the clustered application participates in the same security domain, i.e., shares a common user and group database. Management operations within the cluster of machines and within the application instances take effect both in the individual instance and across its peers.

Appendix C: Digital Government and Enterprise Architecture



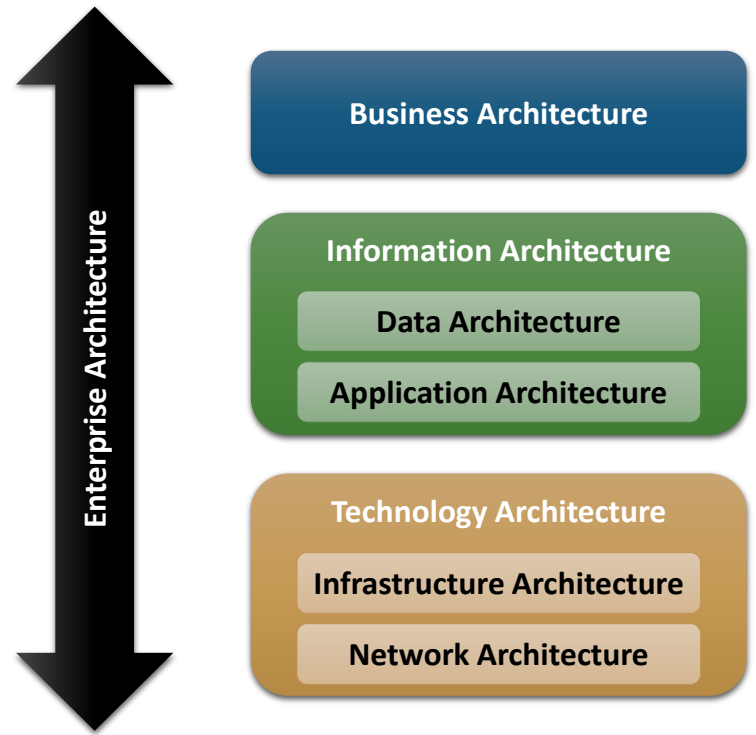
Digital Government and Enterprise Architecture

Introduction

This appendix provides a basis for understanding the underlying elements of the Enterprise Architecture that support the transition to Digital Government.

Definition of the Enterprise Architecture

Over the past 20 years, one of the major emphases of government Information Technology planning has been the adoption of an enterprise architecture to help align IT standards with business needs. Enterprise-wide standards in local governments have been used to help achieve some of the prescriptive goals of digital government such as sharing and integration of information. Since many digital government applications (e.g., ERP, GIS) tend to be cross-departmental in nature and involve secure transactions, it is important to have enterprise-wide standards in place before implementing specific digital government measures. There are also infrastructure standards that are especially important to many digital government applications such as online transactions including the establishment of credit card payment capability and associated policies, technologies to support secure transactions such as public key infrastructure, and the establishment of common software standards.



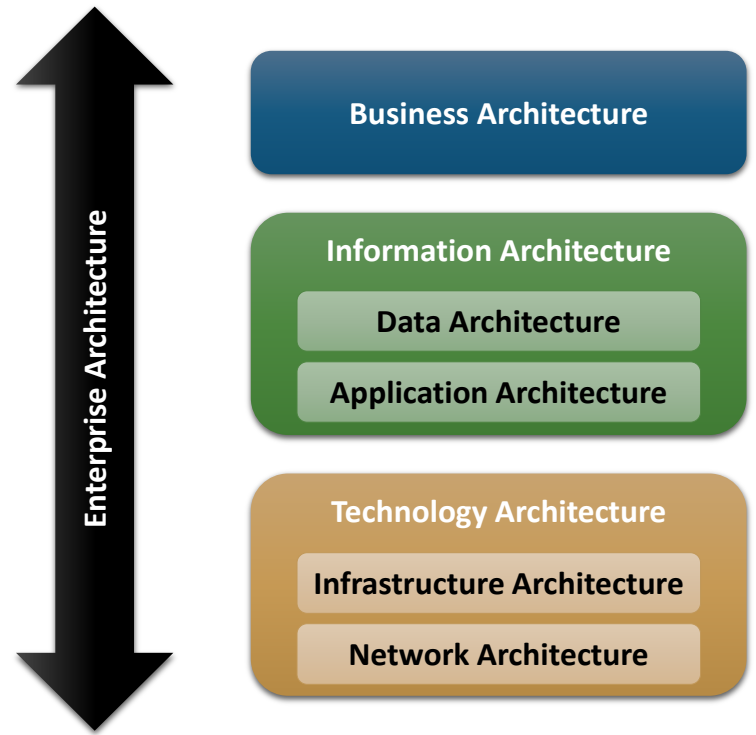
Digital Government and Enterprise Architecture

Definition of the Enterprise Architecture

The concept of an Enterprise Architectures was originally defined by the National Institute of Standards (NIST) in their Memorandum 97-16 (Information Technology Architectures). In this guidance, a five component model was adopted by NIST that consisted of:

Business Architecture

Business Processes: This component of the Enterprise Architecture describes the core business processes which support the organization's missions. The Business Processes component is a high-level analysis of the work the City performs to support its mission, vision, and goals, and is the foundation of the EA. Analysis of the business processes determine the information needed and processed by the City. This aspect of the EA must be developed by senior managers in conjunction with IS managers. Without a thorough understanding of its business processes and their relation to the City's missions, the City will not be able to use its EA effectively. Business processes can be described by decomposing the processes into derivative business activities. However, the processes remain at a high enough level to allow a broad focus, yet sufficiently detailed to be useful in decision-making as the City identifies its information needs. Examples would include the payroll process, purchase requisition process, permit request process etc.



Digital Government and Enterprise Architecture

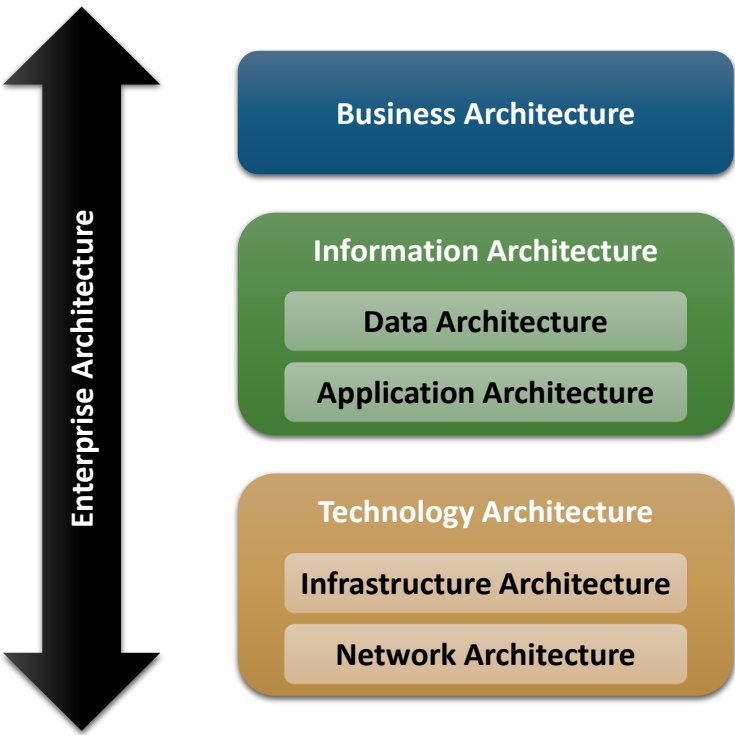
Definition of the Enterprise Architecture

Workflows and Relationships: This component analyzes the information utilized by the City in its business processes, identifying the information used and the movement of the information within the City. The relationships among the various flows of information are described in this component. These information flows indicate where the information is needed and how the information is shared to support mission functions. Examples include, the workflow for receiving a certificate of occupancy. The workflow will touch multiple processes including the submission of a request for inspection, and review by multiple city departments such as Fire and Community Development.

Information Architecture

Application Architecture: The Applications component identifies, defines, and organizes the software systems that capture, manipulate, and manage the business information to support mission operations. It also describes the logical dependencies and relationships among business activities. Examples may include the Utility Billing Module, Applicant Tracking Application, or the Permit Tracking Application.

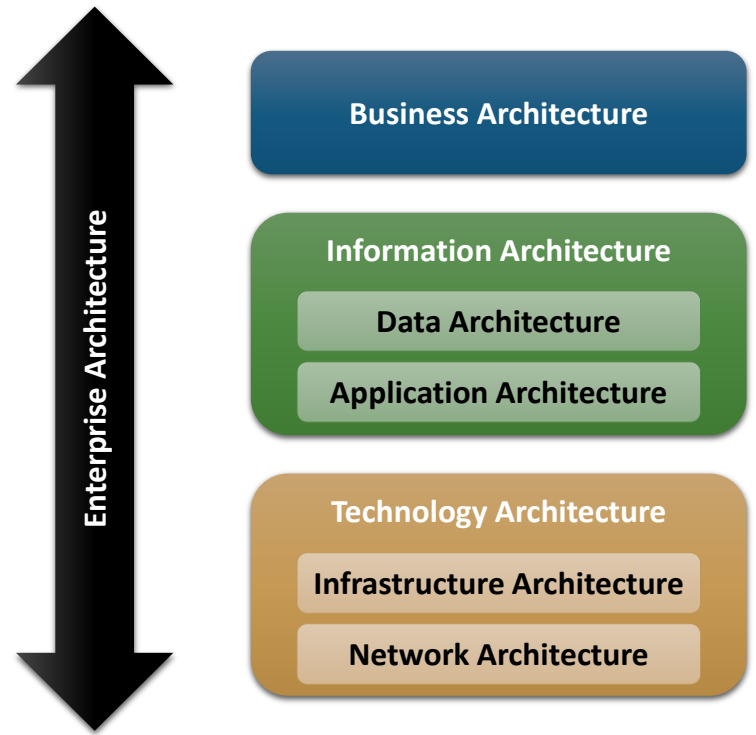
Data Architecture: This component of the Enterprise Architecture identifies how data is maintained, accessed, and used. At a high level, the City defines the data and describes the relationships among data elements used in the City’s information systems. In order to achieve the data architecture, the following models must be developed and incorporated within application design.



Digital Government and Enterprise Architecture

Definition of the Enterprise Architecture

- The conceptual model contains key entities and relationships and presents a high level look at all of the entities within an organization. The Enterprise data model follows on the fundamentals created by the Conceptual Model by providing an entity relationship diagram that adds additional details. This model is part of the business model and shows what classes of information are required to support management and business intelligence purposes.
- An enterprise logical model (EDM) is a fully attributed entity relationship diagram (ERD), which shows each entity, its relationship to other entitles and specifies the applicable business rules.
- Dimensional Model, represents facts and dimensions, which are used for reporting and analytical purposes.
- Physical Data Model, is the final representation of the data base structures that will be generated from the model. It contains the detailed specifications for the database design and, in a model driven environment. Physical data models specify the data base design and should always be synchronized 100% with the database.



Digital Government and Enterprise Architecture

Definition of the Enterprise Architecture

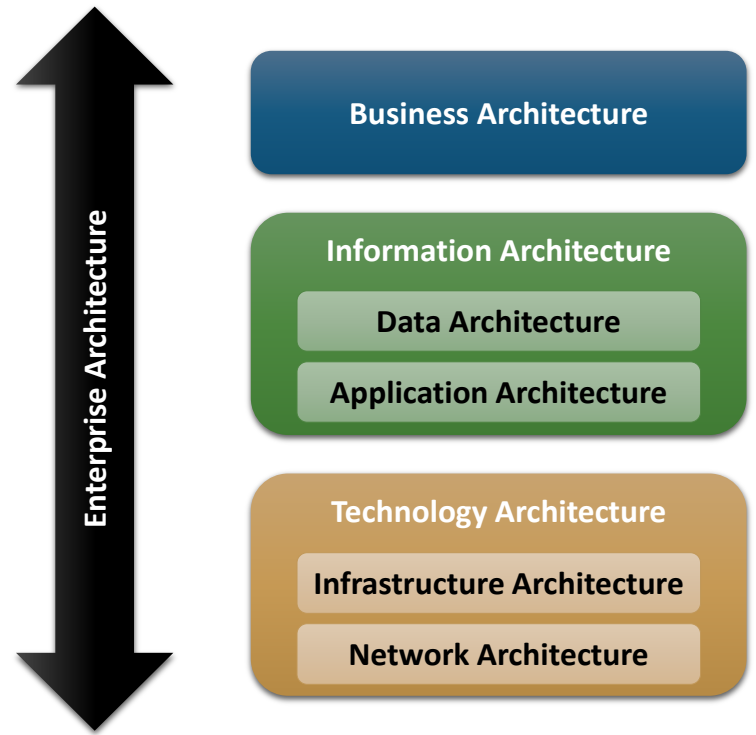
Technology Architecture

In the subsequent 20 years, the NIST EA framework has been further modified to address the evolving needs for the management of the delivery of information services. These include:

- The Zachman Framework for Enterprise Architectures — Although described as a framework, it is actually more accurately defined as a taxonomy and thus difficult to actualize.
- The Open Group Architectural Framework (TOGAF) — Although called a framework, is actually more accurately defined as a process and provides only a methodology for approaching EA.
- The Federal Enterprise Architecture — Can be viewed as either an implemented enterprise architecture or a proscriptive methodology for creating an enterprise architecture.

The history of the field goes back 20 years, but the field is still evolving rapidly. We have adopted the fundamental NIST model due to its straightforward simplicity and extensive adoption.

The following provides a description of how the Enterprise Architectures have evolved over the past 40 years and the current state of the art of City Application Architecture.



Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

Centralized Proprietary Architecture

The early days of computing were dominated by centralized mainframes. These centralized behemoths provided for computation, storage, and input/output through separate major components. These systems supported the Business Architecture with completely defined Information and Technology Architectures provided by a single vendor (e.g., IBM AS/400 (iSeries), IBM MVS, DEC VAX/VMS). These systems were first offered in the early 1970s and provided a more economical computing approach through utilization of the central processor for both computation and I/O, and by offering easier to use software systems requiring less user support. Such proprietary systems are now on the wane. Although systems such as the IBM iSeries remain popular, sales are declining, and some vendors are rapidly exiting the arena. Indeed, the IBM iSeries is the only older proprietary minicomputer which remains viable today.

Client/Server Architecture

The mainframe systems evolved towards the more distributed Client/Server (C/S) architecture. Client/Server involved the

segregation of the single mainframe application so that it operated between a client application operating at the desktop and a server application executing at the backend server. The user application provides a graphical (GUI) with an "intelligent front end" user workstation (client), communicating over a local area network (LAN) or wide area network (WAN) to access the shared "back end" processor (server).

This architecture consists of four logical layers: the application, the server, the client and the network.

Application: The first and most important component of the architecture is the application. The application is the program that runs on either the client or the server. It determines how the user perceives the O/S system. An application exploits the client's user interface for presentation to the user, and exploits the server for data services and some processing. However, the shifting of application logic to the client side has thrown the Operating System (O/S) model off balance forcing ever increasing processing requirements on the client.

Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

Server: The back-end system, the server platform, must be selected in conjunction with the database server software. Critical issues in this platform include server capacity, database software meeting user performance requirements, and the server operating system supporting the chosen database software. Operating systems such as Windows Server and UNIX provide advanced features such as pre-emptive multitasking, multithreading, virtual memory management, and high performance Input and Output, which are critical to allowing high performance databases to operate.

Client: The client is one of the most important aspects of the overall Operating System (O/S), yet most often overlooked. The client is where most of the application processing occurs and where the user perceives the overall system. Important aspects to consider when designing the client are the selection of a front-end development system that meets the programmer, database server,

and user needs. Tools such as Visual Basic and SQL server are instrumental in providing effective applications; however, these tools must be selected in conjunction with the processor, operating system, and user interface.

Network: A common characteristic of distributed clients and servers is their communications capability provided by the Internetwork. Within the integrative role provided by the Internetwork, the concept of the Operating System (O/S) computing is to assure that end users have transparent access to any computing resource needed across the City.

Internetwork: The Internetwork which consist of a Local Area component or LAN, removes requests from the client to the server, and then transports the results back to the client. The Operating System (O/S) design requires the selection of the type of network, (e.g., Gigabit Ethernet, T-1), a transport protocol, and the networking equipment.

Digital Government and Enterprise Architecture

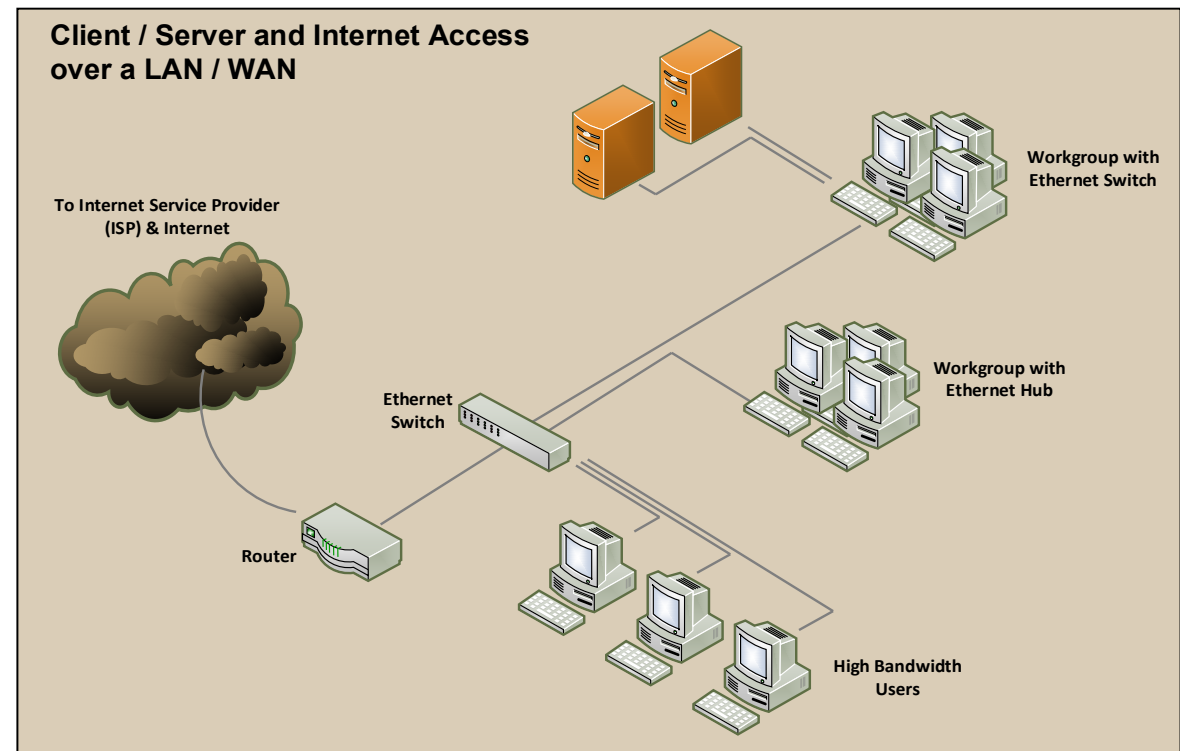
Evolution of the Enterprise Architecture

This architecture combines a variety of closely integrated commercial products to establish a fully supported system solution. The major benefits of Open Systems Client/Server Architecture are:

- Flexibility - client pieces can be added or changed without disturbing existing server data and services.
- Interoperability with legacy systems – Existing systems can find a server role (or a client role if appropriate). This allows old and new systems to retain connectivity and integrity.
- Speed of new application deployment – Given a stable server core, most new applications will boil down to deploying a client piece that supports a new process or product concept. This can be accomplished very fast with today's advanced client development tools.

These advantages of durability and flexibility of architecture drive the guidelines for good client server design. In essence, core, fundamental data and programs (objects) should reside on the server, whereas presentation, process models, end calculations,

etc. should reside on the client. The client side then typically gathers and validates data and gives visual feedback, while the server side responds to client requests for data and services.



Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

However, to obtain these advantages, one must deal with the higher complexity of Open Systems (O/S) because they have many more components than centralized predecessors. The networks, operating systems, database servers, user interfaces, front-end development tools, middleware, processor types, standards, and design methodologies all complicate the client/server strategy.

Critical issues with Client/Server architecture implementation are:

- Design – Most benefits from client server depend upon getting the functional split right. The server side must be stable and fundamental (should model true business objects), and communications between client and server should be minimal to accommodate network bandwidth constraints.
- Change Management – Changing to client server requires a new way of thinking about systems development, with emphasis on what to reuse and what to buy, rather than on what to build. Accomplishing this change in thinking can be a major challenge.

Web Services Architecture

Web Services merges the strengths of the centralized mainframe

with the flexibility of distributed client/server. Applications are resident on a central server and are accessed through thin clients or browsers on the desktop. However, these applications do not go out over the Internet; they reside on a server on an organization's network and operate within its intranet. These applications utilize the latest technologies, such as .NET, Java and HTML5, to maximize interoperability and data sharing capabilities. Though WEB services is where the general industry has been heading, the advent of mobility and tablets has altered the direction towards HTML5 based WEB services. However, vendors are not expected to make the full migration to HTML5 web services for another 5 years.

Web Services systems, like client/servers, utilize a client based “front-end” application called a web browser (e.g., Internet Explorer, Chrome). The application requests discrete information “pages” from the Web server and displays them on the browser at the user workstations. Users do not have to know how to connect to a server, or even where a server is located on a network. Older, powerful mainframe or client/server applications become easier to use.

Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

There are several distinguishing features of Web Services applications:

- Use TCP/IP (transmission control protocol/Internet protocol) for both wide-area and local-area transport of information,
- Use HTML (hypertext markup language), XML (Extensible Markup Language), SMTP (Simple mail transport protocol) and other open Internet-based standards as the means of moving information from clients to servers
- Are based on Web services standards such as Web Services Description Language; SOAP (Simple Object Access Protocol); and Universal Description, Discovery and Integration, or UDDI
- Are completely owned by the City and not accessible from the Internet-at-large by the general public.

Many government organizations have already implemented intranets and have begun to realize some of the following benefits by using the web services technology.

Reduced Operating Costs

- Cost-effective solutions. Intranet applications can be developed more quickly than conventional applications, so the costs are lower and the time to completion is shorter-even

when legacy databases are involved.

- Lower cost of ownership. Complex networks-those that involve a greater number of network protocols, vendors, and applications-are more expensive to own than simple ones. Intranets lead to reduced network complexity and can ultimately result in lower network ownership costs.
- Lower cost of training. Intranet applications share a common interface-easy-to-use web browser-so employee application training is easier and less expensive.
- Electronic processing saves money. The price of a paper-based purchase request is \$58, compared with about \$10 when done electronically. (Source: Concur Technologies).

Improved Communications

Make it easier to for employees to send and receive information by providing e-mail services to the entire staff. Create an internal website for posting staff information such as eligibility guidelines for health and human services programs, technology support information, benefit information, worker safety information, policies regarding vacations and leaves, and agency guidelines and procedures.

Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

More Efficient Forms Delivery

Reduce the cost of printing and distributing forms by posting them in a format suitable for downloading on an internal website. Introducing a revised form is also easier, because you simply have to post the new version instead of replacing the current inventory.

Simplified Report Generation

Make it easier for employees to generate reports by providing intranet-based applications that query the database to answer the most frequently asked questions. Creating a report can be as simple as "point and click" when the applications themselves perform the actual database query.

Easier Applications Deployment

- Human Resources: Manage payroll, time keeping, personnel, and benefits electronically on a government-wide basis, not agency by agency. Also track training and professional credits in the same way.
- Purchasing: Use standardized and easy-to-develop electronic forms to handle routing, approval, processing, and payment.

- Emergency Services: Maintain specific local information for community initiatives. Also integrate community-specific information with data from other departments, such as transportation, public works, social services, probation and parole, and motor vehicles.
- When citizens or customers can get the information and forms they need on their own, government employees have more time to address complex problems.

These application transitions have caused a similar transition in the network environment, such that the network traffic will be dramatically altered.

In such a dynamic environment, the Transport Network both LAN and WAN must support high-speed transmission to satisfy the response time requirements of the applications. Given the growing trend of traditional as well as new applications to send large quantities of burst-oriented data from LANs across the WAN, the network must now be able to provide high-capacity bandwidth on demand.

Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

Intranet Web Services Systems Integration

Data as we know it today is usually completely different in every single system we use. Each software system has its own database and internal “business logic” that means nothing to an external system. Because of this, we have to go to a lot of work in order to translate the data into either a common format, or to another form that the external system will understand. This translation layer can be very difficult to implement as well as time consuming (re: processor intensive) depending on the technology being used.

Since there are so many distinct systems in use today, this data translation layer has become more important in the integration of the various criminal justice systems. That is what WEB services and the intranet protocol XML (eXtensible Markup Language) is all about.

Web services use standard Internet protocols and data formats to extend a component-based programming model across the Web.

HTTP (the method used today by Microsoft Internet Explorer) is used to access Web services, which are Web-based components and applications built on four core technologies: XML; Simple Object Access Protocol (SOAP); Web Services Description Language (WSDL); and Universal Description, Discovery, and Integration (UDDI).

XML, a self-describing tag-based language, is the foundation of the Web services architecture. Its main value lies in the fact that it is a platform-independent data-transport mechanism. SOAP is an XML grammar that specifies how data and commands are sent between applications. WSDL is another XML syntax that applications can use to query one another about the names and properties of the Web services that they support. UDDI is a directory mechanism for Web services that fills a role much like Active Directory's (AD's) role on a LAN. UDDI lets a Web services application dynamically discover available Web services that it can use.

Digital Government and Enterprise Architecture

Evolution of the Enterprise Architecture

Intranet Web Services Systems Integration

WEB service and XML makes it possible to easily share data with anyone. This can be accomplished by a translation layer at each agencies system. While conceptually not much different than today's method of data transformation, XML makes this process very easy to implement as well as very fast. An XSLT (or XML Stylesheet Transformation) is an XML document that maintains a data mapping scheme to transform one set of data into another. Each agency wishing to share data with another simply needs to publish their schema so that the other agencies will understand their data. XML allows data from any database to be described in a universal format irrespective of vendor.

Architecture	Strengths	Weaknesses
Mainframes/ Minicomputers	Simple architectural solution Maximum systems management and control	Response times dependent upon system usage Unappealing user interface Proprietary solution High backlogs High maintenance and supporting resource costs
Client/Server	Scalability Openness Maximum response time and performance Appealing graphical user interface Solves some weaknesses of mainframe	Can be a complex solution Can put a high demand upon network bandwidth.
Web Services	Leverages best of both mainframe and client/server systems Reduced operating costs Improved communications More efficient forms delivery Simplified report generation Easier applications deployment	Evolving technology Some municipal application vendors have fully implemented the architecture

Digital Government and Enterprise Architecture

City Applications Architectures

Enterprise Resource Planning

The integrated suite of applications provided by the ERP comprise the Applications Architecture for the City’s Administrative operations. They have been used by government over the years, operating in mainframe, client/server and now operating over Web Services architectures. The ERPs consist of an integrated suite of applications, as illustrated here.

These applications address the specific Architecture functions and have been developed by software vendors to encompass the Business and Information Architecture elements specified by NIST. The extensive development effort provided by the software vendors address many of the complex issues that the EA defines, and it provides the City with a defined architecture.

Alternatively, the City would define and develop all of the functional applications in a common platform, such as Microsoft SharePoint. However, an internal development approach will require the City to expend extensive time and resources in developing and supporting an Information Architecture. In an

environment of limited resources, especially within a municipal IT Department, it is not recommended that substantial resources be dedicated in this manner.

It is important to note that some, limited applications development resources will be needed in an architecture dominated by commercial, off-the-shelf (COTS) applications; these systems will meet most, but not all of the specific functional systems needs of the City. To close these gaps, typically in areas such as GIS, document search, integrated web applications, and systems interfaces, applications development will be needed.

The applications provide integrated process with e-commerce features to replace the existing paper routing process for functions such as: vendor interaction, bidding, requisitions, approvals, purchase order generation, fixed asset/inventory logging and accounts payable. Human Resource modules provide for applicant tracking, and payroll and personnel functions such as salary negotiations, step/range tables and pension processing. Systems currently available on the market today provide functions such as those described in the table below.

Digital Government and Enterprise Architecture

City Applications Architectures

Function	Description/Components
Executive Management	Provide the ability for viewing overall and departmental actual budget status in an easy-to-use and easy to manipulate “dashboard” format.
Finance & Accounting	<u>General Ledger</u>: Provide displays and drill-downs. Allow the ability to track projects and grants across multiple fiscal years with an automated link to the general ledger chart of accounts. <u>Budget</u>: Allow the creation of the budget by using your current year’s fiscal information as a starting point. Allow the ability to perform what if analysis by departments or Citywide. Allow to link personnel details to budgeted line items and associate items, such as a computer and a desk for new employees. <u>Purchasing (including Bid Management, Requisitions, and Contracts Management)</u>: Allow user access to enter requisitions with full access to available vendors, commodities, budget balances, and frequently requested items and automatically notify all approvers by e-mail. Elimination of paper routing should be key allowing purchasing staff to view all approvals and any attachments, and with one step can convert requisitions into purchase orders and encumber the funds. The system should allow for Purchase Orders to be sent to the vendor via hardcopy, e-mail, or fax. When the item arrives, the system should automatically notify Accounts Payable. Additionally, all items purchased from certain accounts or over the fixed asset dollar threshold should automatically create a Fixed Asset record and place it in a file for review with all associated purchasing and accounts payable information. <u>Fixed Assets</u>: Track all information for depreciation costs to post to the General Ledger and adhere to GASB reporting requirements. <u>Accounts Receivable/Cash Receipting</u>: Track all payments made to the City, and provide for a single collection point for all cash receipts from peripheral systems, e.g., Parks & Recreation, Courts. This single collection point should allow citizens utilizing self-service to see all financial transactions they have with the City, and make a single payment to close them out. <u>Treasury</u>: Allow for tracking and management of financial assets of the City. <u>Accounts Payable</u>: Allow payment of existing encumbrances by choosing a purchase order, having the details default, and adjust any differences. Any new invoices should be easily added to the system and charge to the appropriate accounts.
Human Resources	<u>Applicant Tracking</u>: Accept job applications over the Internet, from a kiosk, or by completing a traditional application. The system should allow applicants to open positions as a link on the City's web site and allow applicants to enter their own information on a web application form with an attached resume. Allow departments can review, creation of an applicant database, run reports, and track interview information. Once hired, all information from the applicant’s record should flow through the system to create the base for their employee file without any need for staff to re-enter the information. <u>Personnel</u>: Given the proper security, allow personnel to have access to all the information they need to know about an employee. This will facilitate their ability to answer employee or supervisor questions regarding absences, training, certifications, and emergency contact information. Personnel would also include:

Digital Government and Enterprise Architecture

City Applications Architectures

Function	Description/Components
Human Resources	- Position Control: Allow to account and identify all the budgeted positions within the City. It should provide information on the number of Full Time Equivalents (FTEs) assigned to positions, and a description of the duties. The system should allow the ability to track the details regarding the positions and the personnel who held them. - Personnel Budgeting and Projections: Allow the ability to create the next year's budget allowing increasing employee salaries for the rest of the current year. Along with the salaries, the system should allow the addition of fringe benefits so all information is considered. The system should allow salary projections to be done using an existing employee or a group of employees attached to a salary schedule and allow the calculation using percentage, dollar amount, or both, an increase or decrease to those employees' schedules, and provide a series of reports. <u>Payroll</u>: Allow setting up the parameters of the pay run and timecard entry, as well as calculating and running reports. In addition, allow exceptions-based payroll reporting so as to allow efficient default all of your employees' time and pay run information, leaving only the entry of personnel information who have worked outside the typical scope of their jobs. <u>Employee Expense Reimbursement</u>: Allow employees to electronically submit expenses for reimbursement. This should interface to payroll for payments. Features may include receipt image submission using a phone application. <u>Benefits</u>: Track and manage benefits information for staff, allowing for adjustments allowed. <u>Employee Reviews</u>: Provide a workflow for performing reviews, including templates and supervisory approval, and reporting on uncompleted reviews. <u>Training</u>: Track training and certification requirements for each position, with expirations. Allow for notification of employee and supervisor prior to expiration. Allow for the tracking of training and certifications taken by employees, with imaging and attachment of verifying documentation. <u>Employee Self-Service</u>: Allow access to all employees with a convenient web site so they can access their own employment information – anytime, anywhere. Either over the City Intranet, or from home over the Internet, the employees should have secure access to their payroll and personnel information through a web browser interface.
Community Development	<u>Electronic Plan Review</u>: Provide real-time review of detailed plans and regulatory documents with online examination, markup, commenting, electronic stamping and signature of plans, architectural drawings or licenses. Compare updated plans side by side or as an overlay to easily identify proposed changes. <u>Licenses</u>: Provide licensing management capabilities that utilize industry standards and templates for license type (e.g., business, occupational) and best practices workflow. <u>Permits</u>: Provide ability to complete a commercial or residential building permit and keep multiple departments informed in real time. Ability to configure workflow from application to issuance of a Certificate of Occupancy, including ability to route task lists and alerts, perform fee calculations, track collections.

Digital Government and Enterprise Architecture

City Applications Architectures

Function	Description/Components
Community Development	<u>Inspections:</u> Provide Inspectors with real-time access to information, including list of inspections for the day, routing, current plans, historic permits, Code details, GIS, zoning and enforcement data. <u>Code Enforcement:</u> Provide Code Enforcement officers with the ability to create and manage cases, including attaching pictures, drawings or sketches, notes, video and sound files. Provide officers with real-time access to information, including daily job list, routing, current plans, historic permits, Code details, GIS, zoning and enforcement data. Ability to track/update status, communicate status and violations to citizens. <u>Citizen Self-Service:</u> Provide citizens with Web-based capability to submit plans, permit applications and fee payments, schedule inspections, and submit complaints. <u>Field Mobility:</u> Provide inspectors and code enforcement officers with the ability to manage cases and results for inspections using their mobile device. Ability to schedule inspections, plan routes and attach notes and photos. Provide store-and-forward capability for low/no connectivity areas.
Citizen Relationship Management	Citizen Relationship Management (CRM) solutions are designed to provide a single issues management database. The database contains all City issues and is available for use by all key City departments. Furthermore, it would be integrated with other key City systems, such as GIS, Utility Billing and Code Enforcement, so the maintenance of the data would be seamless and not require additional effort by department. Whether the issue was captured by a call center or by another department, all issues would be maintained in this single database for reference by any department. The CRM software solution must include address validation. Since the key for nearly all issues is the location of the issue, the system must capture accurate location information to ensure field coordinators, inspectors, monitors, etc. can locate the problem. Also, address validation is essential for identifying if the issue has already been input and is being addressed. The CRM software needs to be integrated with the core operational systems of the City. At a minimum, bi-directional interfaces should be implemented to: ▪ Community Services service request/work order management system. ▪ Code Enforcement application. The CRM solution should include the capability to extend the CRM system to the City web. Citizens should be able to input issues and check status via the Internet. Internet access allows citizens to be “self-served” anytime from any Internet capable computer. It should also include address validation and prompting for the closest addresses found. The citizen should be notified of status via email as an option. Given the availability to access GIS over the Internet, the system might also link the citizen to GIS to locate the street, intersection or specific address.

Digital Government and Enterprise Architecture

City Applications Architectures

Function	Description/Components
Asset Management	<u>Asset Tracking</u>: Ability to enter, track and manage City assets, including attributes, cost, value (considering depreciation), location and maintenance history. <u>Work Orders</u>: Ability to issue work orders for installation, repair, replacement, or preventative maintenance. Ability to turn service orders into work orders. Ability to track performance against work orders, including time and resources used, and mark completed. <u>Fleet</u>: The system should allow tracking how much it costs to maintain equipment and vehicles. The system should allow the tracking of all costs associated to a service order for any vehicle or equipment serviced by the City. The orders should integrate with the inventory system to pull from the existing stock in warehouse inventory to complete routine maintenance or scheduled maintenance. Costs must be integrated to the general ledger so that the user can generate reports on items that are overdue for maintenance as well as the total costs associated with a specific item. <u>Inventory</u>: This function should be fully integrated with the general ledger, purchasing, and service request/work order system. <u>Field Mobility</u>: Manage work orders, establish calendars. Provide field personnel direct access to this functionality.
Utility Billing	<u>Premises and Customer Accounts</u>: Setup accounts, premises and owners, person responsible for the account. Add/change individuals, services, deposits. <u>Meters</u>: Inventory and track meters, order installations, track readings. <u>Rate Structures</u>: Ability to create and manage rate structures. <u>Billing, Payments & Collections, Adjustments</u>: Control billings, payment recognition, collection processing, adjustments, mailings, delinquency notices. <u>Citizen Self-Service</u>: Provide utility clients with web-based access to their utility account for real-time information, including: billings, payments, and consumption history. Also provide for credit card payments. <u>Service Requests & Field Mobility</u>: Manage service orders, establish calendars, cut-off-lists, assign on/off fees. Provide field personnel direct access to this functionality.

Digital Government and Enterprise Architecture

City Applications Architectures

Electronic Document Management Systems

Electronic Document Management Systems (EDMS) provide an automated approach for controlling document-based information. These systems organize and manage collections of information in the form of electronic objects and provide access within workgroups and across the organization. EDMS is a combination of five components: Document Management, Imaging, Electronic Forms, Content Management and Workflow. These can be grouped into Imaging, Document Management and Content Management Applications.

Electronic document management (EDMS) software constitutes a set of services for organizing electronic documents; managing content; enabling secure access to documents and unstructured data; routing documents and automating related tasks; and facilitating document distribution. Core EDMS functionality includes library services (check-in/check-out, version control, and document-level security); cross-repository searching; common system administration; and unified system management. Recent product introductions point to an increased leverage of Web technologies and standards (HTML, XML); the addition of

Web publishing and enhanced information retrieval capabilities, and support for managing documents at a granular, component level. The EDMS market is in transition as core library services and repositories become commodities. The leading EDMS vendors continue to morph their products into content management or knowledge management solutions.

Selection Guidelines

Application focus, implementation scale, and scope are general considerations in selecting EDMS software. In addition, the City should look for EDMS vendors that comply with industry standards and that have direct expertise in their business applications and specific industry or that have partnerships with system integrators who have that expertise.

Other decisions in selecting EDMS software include the following:

The document management product's interfaces with the City's application infrastructure (e.g., ERP, Public Safety Systems).

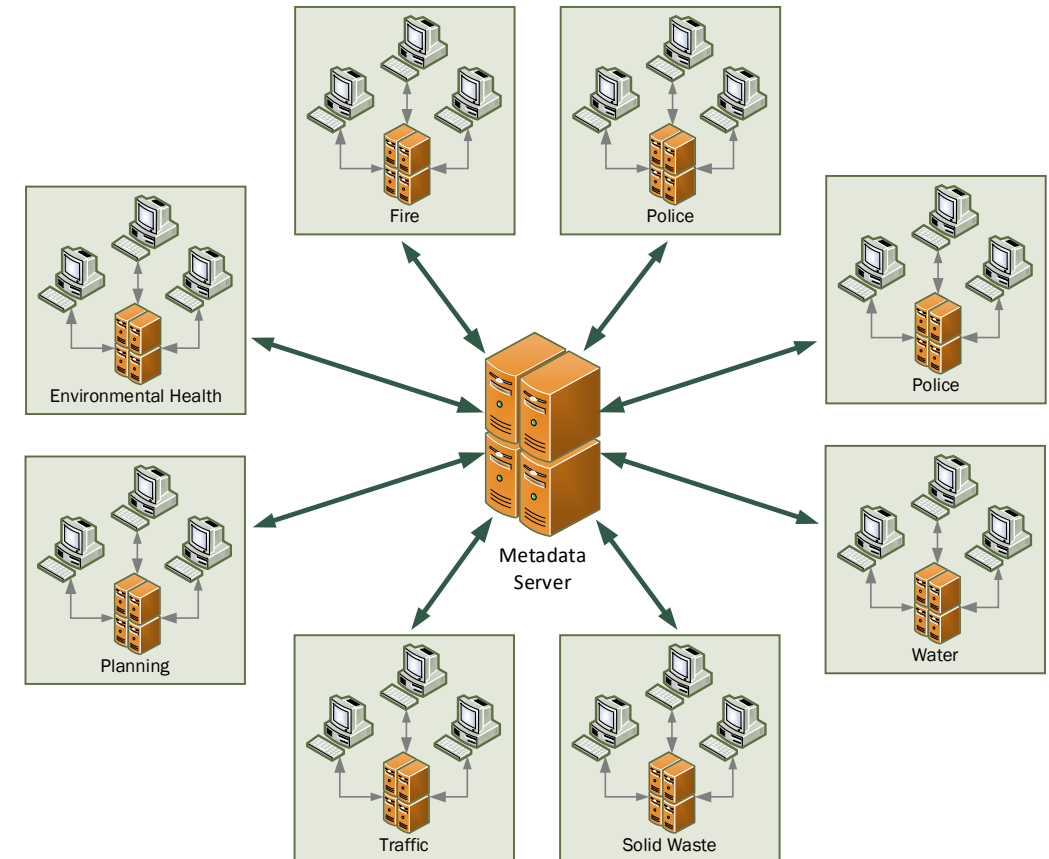
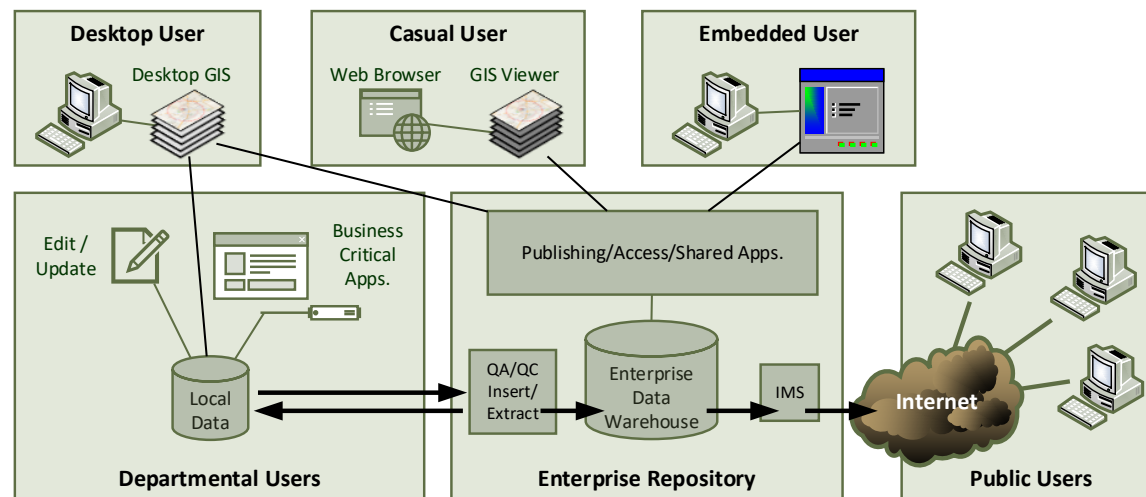
Digital Government and Enterprise Architecture

City Applications Architectures

Geographic Information Systems (GIS)

Understanding basic application architecture, relationships between integrated municipal applications and the component interfaces required to support GIS solutions provides a foundation for understanding distributed GIS applications which would be implemented in the City. The GIS can serve as a primary integrating database which ties all of the operational departments as shown to the right.

The Client Server GIS Architecture combines a variety of closely integrated applications to establish a fully supported system solution.



Digital Government and Enterprise Architecture

City Applications Architectures

Geographic Information Systems (GIS)

The Integrated GIS architecture can be configured in three tiers:

Client Tier

- PC workstations that provide user access to the GIS System.
- The Workstation displays and controls application processes, which could be running X-emulation software, Windows terminals, or Web browser clients.
- Client functions include general spatial query and analysis studies, simple map production tools for general users and commercial map productions for professional users, general-purpose query and analysis operations, and spatial data maintenance.
- In single tier architectures the client application server and desktop user workstation may be the same platform

Digital Government and Enterprise Architecture

City Applications Architectures

Geographic Information Systems (GIS)

The Integrated GIS architecture can be configured in three tiers:

Application Tier

- Application servers that handle application processing.
- GIS applications are supported within the distributed configuration by hardware platforms that execute the GIS functions. This tier supports access to the database tier and Web transaction servers that provide transaction-based map products to Intranet and Internet browser clients
- GIS applications can provide interfaces to custom business solutions that support specific business needs such as the permitting and inspections systems. End users do not require geographic expertise and use applications to support standard business functions

- The application server processes all spatial and attributes data requests received from the GIS client application. A transaction request is prepared by the GIS application client and sent to the server for processing. The server process completes the transaction query to the database server and returns the response back to the client for processing. There is no requirement in this configuration to map the database server disk to the GIS client.

Digital Government and Enterprise Architecture

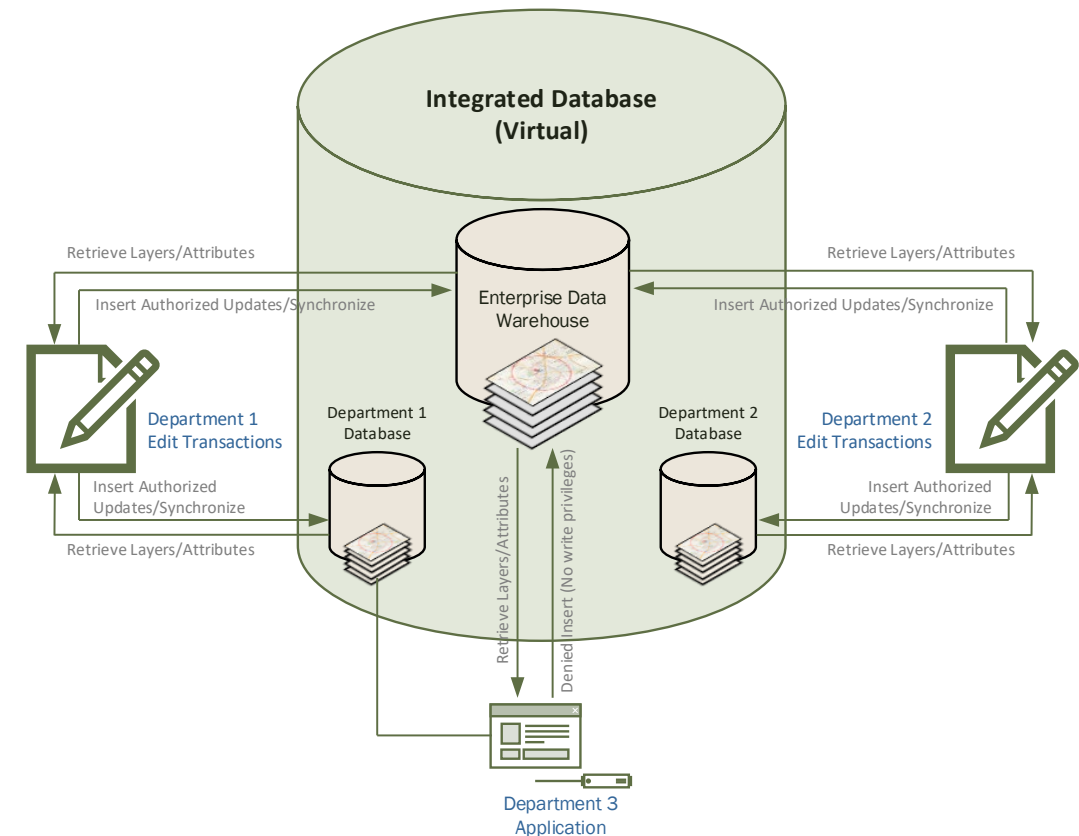
City Applications Architectures

Geographic Information Systems (GIS)

- The server can also provide a communication interface between the City's applications and an Internet Web server.
- In a two-tier architecture, the application server and central data server may be on the same platform
- In a centralized solution, application servers can be UNIX or Windows NT platforms that provide host-computing services to a number of GIS clients.

Database Tier

- Servers that house the supporting database.
- The GIS System relational database is the central repository for storing all of the City's spatial and attribute data into a single standard commercial DBMS such as Oracle or MS SQL server.
- Interacts with the application server for displaying, retrieving, and analyzing data, and generating maps and reports.



Digital Government and Enterprise Architecture

City Applications Architectures

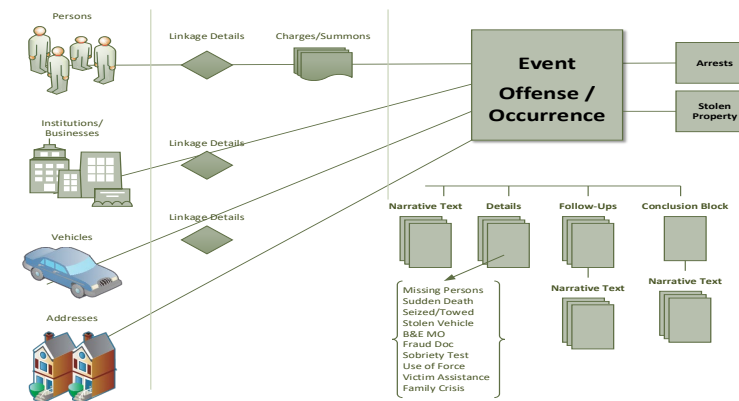
Public Safety Systems

The CAD system (managed by BCES) and the Records/JMS system (managed by BIPIN) comprise the Tri-Cities regional public safety architecture. Both agencies support vital functionality for BCSO, FCSO, Kennewick, Richland, West Richland, Pasco, Prosser and Connell as well as for the two correctional facilities. The CAD system is the system that processes and initiates an incident. This system integrates internally with the E911 telecommunications system and provides call details such as the name and address of a caller so that the proper unit can be dispatched. Additionally, this is the application used to send information about the circumstances of the incident to the police officer. Data flows from the CAD system to the RMS where all the necessary details are then stored if a report is ultimately required.

The RMS (Records Management System) contains all of the data from the numerous types of reports that any law enforcement agency must deal with. These reports which are primarily entered by field patrol officers might include an incident report, a booking

sheet or arrest report, a witness statement or any other relevant report.

From here, data must be shared with several other internal and external applications. If an incident generated a report that requires further investigation by a detective, then the information would be sent to the Case Management Module System where the detective could maintain a collection of reports and other data that may be pertinent to an ongoing investigation that may include numerous different incidents.



Digital Government and Enterprise Architecture

BIPIN Architecture

Public Safety Systems

Data from the RMS would also be integrated with or augmented by Crime Analysis tools so that an analyst could determine crime patterns and trends as well as report all crime data to the FBI. The RMS's Property Management System is yet another component of the RMS that tracks of the chain of evidence of a given incident or crime. It too receives data from the RMS but can also exchange data with the detective case management as well as externally with the DA's CMS.

The RMS would also need to send data to the Jail's JMS (Jail Management System) anytime a person is arrested and booked into the jail. The Department of corrections (DOC) RMS sends data to both the RMS and the DA's CMS whenever a change occurs in a given individuals incarceration status.

The Jail needs to share data with external vendors such as Guardian ,Linx, Vine, Keefe, CTEL, Summit, Naphcare, and others. Its own JMS contains all of the functionality that it requires such as reports, accounting, commissary information,

purchasing, etc. It initially receives data from the Police RMS which is typically contained in a booking report. From there, the Jail must process the arrestee into their system. This involves taking information from the booking report and then integrating that data with that from other sources. DOC RMS is queried to obtain a record of any prior convictions or periods of incarceration. It is also important to obtain any public health data on the prisoner since this individual is now under the full care of the government. This information is obtained from the Health Department and included in the individual's record.



Council Agenda Coversheet	Agenda Item Number: 5. Council Date: 10/24/2023	Category: Info Only
	Agenda Item Type: Presentation Subject: Park & Recreation Comprehensive Plan Strategic Recommendations Department: Parks & Recreation	
<u>Summary</u> Berry Dunn Project Manager Teresa Jackson will present a PowerPoint capturing the highlights from the Draft Comprehensive Plan. This presentation will include a new Mission & Vision developed in conjunction with KPR staff, proposed six-year CIP funding needs including the Southridge Turf project, FTE recommendations, additional master planning needs, and implementation priorities for the next six years. The implementation plan consists of five key Priority Areas aligned with the Citywide Priority Strategic Areas (Community Safety, Economic Development, Infrastructure and Growth, Quality of Life and Responsible Government): Organizational Excellence and Ensure Financial Stewardship, Maintain Recreation Infrastructure, Community Safety through Safe Parks, Provide Inclusive Access to High-Quality Parks, Trails and Programs, and Leverage the Potential of Recreation as an Economic Driver. The Draft Comprehensive Plan is attached, including the key section, Executive Summary, found on pages 1-9 of the document. Council will have the opportunity to provide feedback and direction on the draft plan during the workshop. The Recreation Commission will then be presented the Final Draft Comprehensive Plan on 10/27/23, prior to the Council's opportunity for adoption on 11/07/2023.		
Attachments: 1. Presentation 2. Draft Plan		



City of Kennewick, Washington

Parks and Recreation Comprehensive Plan

City Council Workshop Meeting: October 24, 2023

 BerryDunn

Bernardo Wills





Agenda

- 1** Department Mission and Vision
- 2** Implementation Plan
- 3** Capital Improvement Plan
- 4** Discussion and Next Steps

Department Mission and Vision



- ▲ The vision and mission are the result of input from a facilitated workshop with KPR staff coupled with findings from community engagement, stakeholder interviews, focus group sessions and survey results.
- ▲ Reoccurring Themes:
 - exceptional experiences
 - fostering community connections
 - enhancing the quality of life for all residents
 - creating life-long memories

A Clear Vision for the Future



Vision

Enhancing premiere experiences for all through dynamic spaces where connections deepen, and thriving communities create unforgettable memories.



Mission

Intentional development of parks and recreational experiences of the highest quality, ensuring opportunities for all, while focusing on sustainability, fostering community bonds, and creating memories that last a lifetime.

Implementation Plan

- The Comprehensive Plan aligns with the City of Kennewick key priority areas.
- For each priority area, KPR has developed an initiative that is supported by specific objectives, all designed to advance the City's priority areas over the six-year vision outlined in the plan

Responsible Government	• Organizational Excellence and Ensure Financial Stewardship
Infrastructure and Growth	• Maintain Recreation Infrastructure
Community Safety	• Enhance Community Safety through Safe Parks
Quality of Life	• Provide Inclusive Access to High-Quality Parks, Trails, and Programs
Economic Development	• Leverage the Potential of Recreation as an Economic Driver



Responsible Government

Initiative One: Pursue Organizational Excellence and Ensure Financial Stewardship

- The addition of 12 FTE over the next six years is recommended. To address immediate departmental needs, a Project Supervisor, Crew Leaders, Strategic Partnership Manager, and a Guest Services Specialist should be added in the near term.
 - Explore the need for new revenue sources dedicated to Parks & Recreation, including the continued evaluation of a voter-approved Metropolitan Park District (MPD). The new revenue is to provide dedicated funding source for parks, trails, and recreation programs.
 - Utilize the newly integrated maintenance management software to establish a comprehensive preventive maintenance strategy, encompassing scheduled inspections, assessments, and proactive repair and replacement of infrastructure, systems, and assets.
-  Shift from instructor-led program registrations to a department-managed registration process.



Infrastructure and Growth

Initiative Two: Maintain Recreation Infrastructure



- Allocate sufficient resources for park maintenance and development to help ensure high-quality standards.
- KPR should adopt a maintenance and operation program and plan that is reviewed periodically for the management of all park and recreation areas and facilities. Each facility should be assigned an appropriate set of maintenance standards, including both recommended frequency and acceptable quality.
- Perform a comprehensive facility audit of the Kennewick Activity Center to assess its viability for future use.

Community Safety

Initiative Three: Enhance Community Safety through Safe Parks



- Explore Park Ranger model implemented by regional partners.
- Implement safety measures, including adequate lighting, clear signage, and well-marked paths, to enhance user safety on trails and within park spaces.

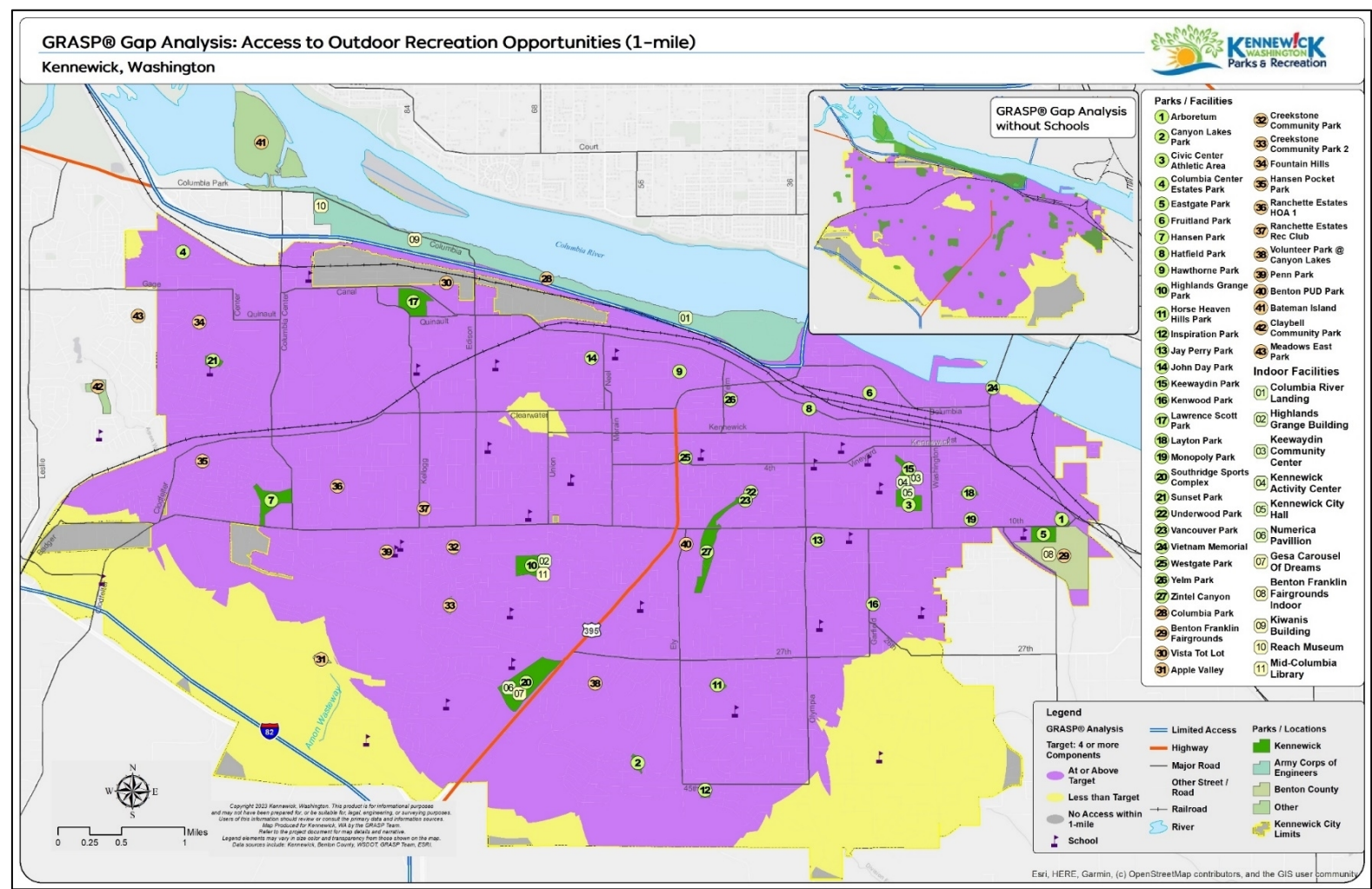
Quality of Life

Initiative Four: Provide Inclusive Access to High-Quality Parks, Trails, and Programs

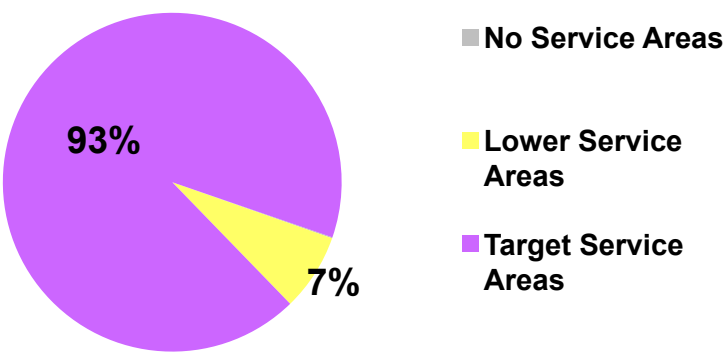


- Adopt a LOS standard of four recreational components in a one-mile proximity.
- Develop, partner, or acquire facilities to help bridge the gap between existing and needed recreational facilities, particularly in underserved locations.
- Explore the potential of developer land dedication or impact fee's on an individual cases by case basis to expand park spaces. Collaborate with local planning bodies to establish transparent and equitable criteria for assessing new park land and amenities.
- Regularly assess the success and impact of existing recreational programs and events to gather feedback for improvement.

Level of Service – One Mile Access



% of Population with Neighborhood Access to Outdoor Recreation



Economic Development

Initiative Five: Leverage the Potential of Recreation as an Economic Driver

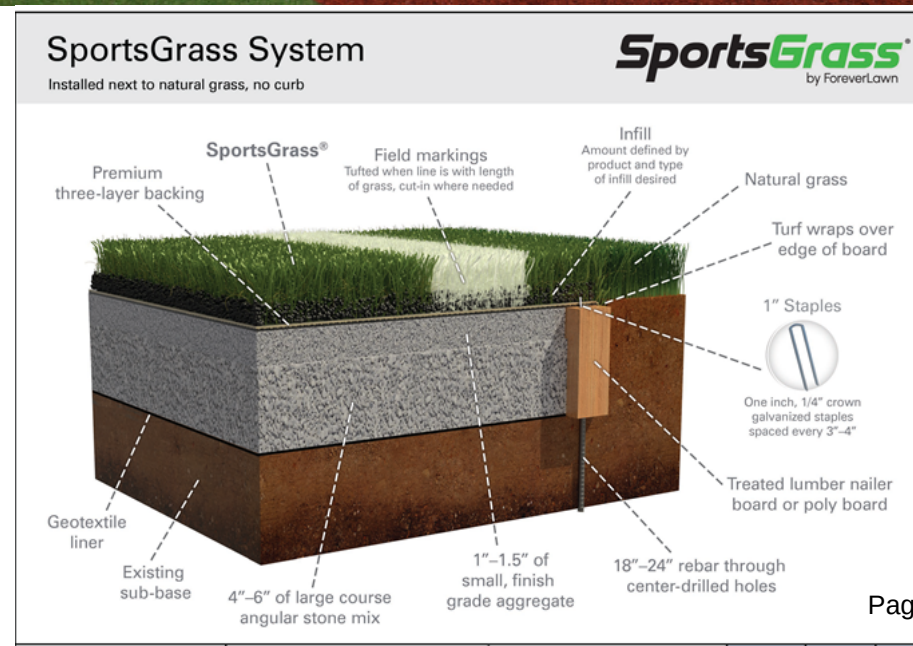
- Develop a Trails Master Plan in partnership with KID.
 - Funding available in 2023/2024.
 - Timeline- post RFP in Nov. 23, Under contract by Jan 2024, Completed est. August 2024.
 - Grant opportunities Fall 2024
- Develop a comprehensive Civic Center Master Plan to include a phased approach for replacement of City Hall, potential Community Center, replacement of the outdoor pool, and other complementary amenities.
 - Develop a Feasibility Study for the construction of a state-of-the-art recreation center, encompassing facility design, budget allocation including O&M, dedicated funding sources, community input, and coordination with relevant stakeholders.
- Conduct a thorough assessment of Kenneth Serier Memorial Pool (KSMP) to determine the need for a new pool facility, including feasibility studies, budget considerations, and community demand. Explore potential collaboration with the Kennewick School District to enhance project viability and impact.



Capital Improvement Plan

- Estimates of probable costs are shown in today’s dollars and are a Rough Order of Magnitude (ROM) intended for general budget purposes.
- The ROM for the six-year CIP is \$10.5 million***
- All cost estimates are based on 2024 figures and were provided by Washington licensed Landscape Architects from Bernardo Willis.
- South Ridge Turf Replacement Project**
 - \$1.45 million CIP Reserve Funds
 - Staff savings over the 15 years product warranty- \$1.5 million
 - Pending Council support, contract for dirt removal and gravel infill with be brought forward for Council approval and included mid-biennium budget review.
 - Timeline: Dirt work-Nov-Dec 2023, Installation of Turf February-March*.

Facility	Rough Order of Magnitude
Columbia Center Estates Park	\$ 1,423,746
Add shelter (16x16)	\$ 154,746
Splash pad replacement	\$ 1,269,000
Eastgate Park	\$ 364,212
Upgrade irrigation and reorient fields	\$ 197,400
Repair, upgrade and enhance the loop walk	\$ 166,812
Derelict Building Demolition	\$ 325,000
Remove horseshoe pits, update seating area and diamond	\$ 325,000
Fruitland Park	\$ 208,145
Remove horseshoe pits, update seating area and diamond	\$ 208,145
Hawthorn Park	\$ 91,650
Add shelter (16x16)	\$ 91,650
Highlands Grange Park	\$ 1,476,270
Splash pad replacement	\$ 1,269,000
Several amenities are showing ware, including trash cans and benches	\$ 207,270
Horse Heaven Hills Park	\$ 881,250
Playground and surface replacement	\$ 881,250
Jay Perry Park	\$ 130,264
Court hoops and nets	\$ 105,644
Improved accessibility to the community garden	\$ 24,620
Kenwood Park	\$ 290,674
Court hoops and resurfacing (concrete)	\$ 203,005
The addition of park paths and seating	\$ 87,669
Lawrence Scott Park	\$ 4,366,311
Synthetic Turf Fields, includes fencing, backstops and fabric	\$ 1,200,000
Building renovation, field lights and concrete replacement	\$ 1,800,000
Basketball court and three pickleball courts are due for resurfacing (concrete)	\$ 616,311
Destination size playground and reconceptualized entry/concrete area	\$ 750,000
Layton Park	\$ 572,180
Small back stop in south/east corner and soccer goal posts	\$ 32,430
Shelter Removal	\$ 11,000
New pre fab restroom	\$ 528,750
Recreation and Aquatics Center Feasibility Study	\$ 120,000
Feasibility Study	\$ 120,000
Underwood Park	\$ 145,000
Swing set replacement	\$ 145,000
Yelm Park	\$ 111,038
Accessible picnic grove	\$ 111,038
Grand Total	\$ 10,505,739





Discussion and Questions

Next Steps

October:

- Final Draft review with Park and Recreation Commission
10/27

November:

- City Council Adoption
11/7

City of Kennewick, Department of Parks and Recreation

Draft Parks and Recreation Comprehensive Plan

Deliverable 13, V4



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Executive Summary

The City of Kennewick, Department of Parks and Recreation (KPR) offers spaces where community members can play, connect with nature, spend time with family and friends, meet new people, and participate in year-round indoor and outdoor programming.

The Parks and Recreation Comprehensive Plan (Comprehensive Plan) update process was designed to strategically address the needs of parks, trails, open space, and recreation throughout the City of Kennewick. The Comprehensive Plan endeavors to provide a sustainable approach to KPR resource allocation for the next six years.



The development of the Comprehensive Plan was shaped by input from residents, park and recreation partners, community collaborators, and City of Kennewick team members from all organizational levels. The process produced a set of flexible recommendations that can adapt to available funding and partnership opportunities, while maintaining focus on elements which stakeholders determined are critical to the city's long-term success.

The process reaffirmed essential goals and objectives of the 2019 Comprehensive Plan while recalibrating to help ensure KPR's services are tailored to meet current and future community needs.

Leading the Way

The City of Kennewick has a long history of ***leading the way***, setting a precedent for innovation and community-driven progress. Throughout its history, Kennewick has demonstrated a remarkable ability to anticipate the evolving needs of its community. By proactively identifying and addressing challenges, the City has consistently improved the quality of life for its residents. From building critical infrastructure to developing programs that enhance the well-being of its residents, Kennewick's foresight has played a pivotal role in its continued growth and success.

"We are accountable to our community for innovative and collaborative efforts that anticipate needs, leverage resources and deliver solutions."
-City of Kennewick

Moreover, the City's talent for leveraging resources efficiently has allowed it to achieve more with less. Kennewick's commitment to responsible resource management has not only ensured financial stability but has also enabled the City to deliver exceptional services.

Kennewick's unwavering dedication to accountability is another cornerstone of its success. The City understands the importance of being transparent, responsive, and responsible to its community. This commitment to openness and a strong sense of duty to its residents have cultivated trust and fostered a deep connection between the City and its citizens.

Additionally, Kennewick's commitment to key priority areas, including Community Safety, Economic Development, Infrastructure & Growth, Quality of Life, and Responsible Government, reinforces its dedication to enhancing the overall well-being of its community. Through strategic

Responsible Government: Responsible government focuses on efficient and accountable use of public resources. It includes investments in administrative functions, compliance, transparency, and governance to ensure that government operations are responsible and responsive to community needs.

Infrastructure & Growth: This area covers the maintenance, improvement, and expansion of essential infrastructure, such as roads, utilities, parks, and facilities. It addresses the physical needs of the community and supports growth and development.

Community Safety: This priority area encompasses initiatives and investments aimed at ensuring the safety and well-being of the community. It may include funding for law enforcement, emergency services, and programs designed to enhance overall community safety.

Quality of Life: Quality of life initiatives aim to enhance residents' overall well-being and satisfaction. This can include funding for parks and recreation, cultural programs, affordable housing, public amenities, and services that contribute to residents' quality of life.

Economic Development: Economic development efforts focus on strategies to promote growth, job creation, and economic prosperity within the community. This can involve investments in business development, workforce development, tourism, and initiatives to attract new businesses.

investments and responsible governance, the City strives to create a safe, vibrant, and thriving environment for all its residents.

The Comprehensive Plan aligns with the City of Kennewick key priority areas. For each priority area, KPR has developed an initiative that is supported by specific objectives, all designed to advance the City's priority areas over the six-year vision outlined in the plan.

Responsible Government	• Pursuer Organizational Excellence and Ensure Financial Stewardship
Infrastructure and Growth	• Maintain Recreation Infrastructure
Community Safety	• Enhance Community Safety through Safe Parks
Quality of Life	• Provide Inclusive Access to High-Quality Parks, Trails, and Programs
Economic Development	• Leverage the Potential of Recreation as an Economic Driver



Tomorrow's Vision

The Comprehensive Plan serves as a strategic roadmap, offering KPR a clear vision of its role in advancing the City of Kennewick's priorities. It outlines strategies and allows flexibility for KPR to adapt to change while remaining dedicated to the City's priority areas.



As part of this planning process, KPR reevaluated its vision and mission, guided by thoughtful discussions, careful examination of planning outcomes, and a deep commitment to improvement. Recognizing the importance of community building and its role in advancing Kennewick's quality of life goals, KPR has strengthened and defined its future direction.

The following vision and mission are the result of input from a facilitated workshop with KPR staff coupled with findings from community engagement, stakeholder interviews, focus group sessions, and survey results. This inclusive approach has played a crucial role in aligning KPR's vision and shaping its core

mission to closely align with and support the priorities of the City and the community it serves.

Vision

Enhancing premiere experiences for all through dynamic spaces where connections deepen, and thriving communities create unforgettable memories.

Mission

Intentional development of parks and recreational experiences of the highest quality, ensuring opportunities for all, while focusing on sustainability, fostering community bonds, and creating memories that last a lifetime.

A Plan for Action

The Implementation Plan and Capital Investment Plan (CIP) are geared towards preserving and safeguarding KPR's current resources. The Implementation Plan aligns with the City of Kennewick's priority areas, featuring initiatives with objectives to advance these priorities over six years. The CIP outlines the expected expenses for the Comprehensive Plan's recommendations and establishes a prioritized roadmap for the next six years. The estimated investment identified in this plan for 2024 – 2029 is \$10.5 million in 2024 dollars.

The following summary represents high priority objectives for KPR to implement in the first one to five years. These items are not listed in any particular order. The full Implementation Plan and CIP can be found in Chapter Seven.

RESPONSIBLE GOVERNMENT

Initiative One: Pursue Organizational Excellence and Ensure Financial Stewardship

This initiative aligns with the City of Kennewick's priority of "Responsible Government." Organizational excellence and sound financial management are essential for the sustainability and growth of KPR. Optimizing resources, improving efficiency, and fostering a culture of continuous improvement will help ensure KPR operates effectively and efficiently. These efforts underscore KPR's dedication to responsible governance within the City.

Priority objectives include:

- Implement the recommended organizational chart as a means to improve morale, address deferred maintenance, and enhance the standard of care for parks, facilities, and trails. The addition of 12 FTE over the next six years is strongly recommended. Suggested positions are outlined in Chapter Two.

Figure 1: Suggested KPR Organizational Chart



- **To address immediate departmental needs, a Project Supervisor, two Crew Leaders, Strategic Partnership Manager, and a Guest Services Specialist should be added in the near term.**
- Continue to explore new revenue sources to ensure dedicated Parks and Recreation funding. Evaluate the implementation of a voter-approved Metropolitan Park District (MPD) to provide a dedicated funding source for parks, trails, and recreation programs..

MPDs have become an important tool for communities in Washington to secure dedicated funding for parks and recreation, helping to ensure the availability of quality recreational opportunities for all residents. Each MPD's structure and offerings vary based on the needs and desires of the community it serves. The creation of an MPD and any subsequent tax levies require voter approval through a ballot measure. Residents within the proposed district vote on whether to establish the district and authorize property tax levies to support its operations.

MPDs are authorized to levy property taxes within their boundaries to generate revenue for park and recreational services. This local funding source allows MPDs to finance the acquisition, development, and maintenance of parks and facilities independently. The service area of an MPD is determined by the district's boundaries, which may encompass one or more cities or unincorporated areas. The district's services are intended to benefit the residents and properties within these boundaries.

The property tax revenue collected by an MPD is dedicated solely to park and recreational purposes. This dedicated funding source allows MPDs to plan and invest in parks, facilities, and programs for the long term.

- Explore the implementation of a recreation revolving fund. This fund should have the flexibility to accumulate resources over time without being classified as part of the general fund. These accumulated funds can then be strategically allocated to bolster recreation programming and activities, or enhance park infrastructure.

A recreation revolving fund is a financial mechanism often used by government agencies or organizations responsible for managing recreational facilities and programs. It operates by allowing the generated revenues from recreational activities, user fees, rentals, and other related sources to be collected and kept within a separate fund. This fund is then utilized to cover the costs of maintaining, improving, and expanding recreational facilities and programs.

The term "revolving" implies that the fund sustains itself through the cycle of generating revenue, which is then reinvested into the maintenance, operation, and development of recreational assets. This approach can create a self-sustaining model where user fees and generated income contribute to the ongoing enhancement and sustainability of the recreational offerings, reducing reliance on external funding sources.

- Utilize the newly integrated maintenance management software to establish a comprehensive preventive maintenance strategy, encompassing scheduled inspections, assessments, and proactive repair and replacement of infrastructure, systems, and assets.

INFRASTRUCTURE AND GROWTH

Initiative Two: Maintain Recreation Infrastructure

This initiative aligns seamlessly with the City of Kennewick's priority of "Infrastructure and Growth." By focusing on maintaining high-quality parks, facilities and trails, this initiative contributes to the City's broader infrastructure by providing essential amenities and recreation facilities for its growing community.

Priority objectives include:

- Allocate sufficient resources for park maintenance and development to help ensure high-quality standards.
 - It is advisable to gradually increase per-acre spending over the six-year life of the Comprehensive Plan. A substantial portion of this increased spending should be allocated to augment Park and Facilities Services with approximately 5 FTEs to enhance the standard of care for parks, trails, and facilities.
- Implement maintenance and operations management standards.
 - KPR should adopt a maintenance and operation program and plan that is reviewed periodically for the management of all park and recreation areas and facilities. Each facility should be assigned an appropriate set of maintenance standards, including both recommended frequency and acceptable quality. See Appendix B for standard of care (frequency) and Appendix C for maintenance standards (quality).
- Perform a comprehensive facility audit of the Kennewick Activity Center to assess its viability for future use.

COMMUNITY SAFETY

Initiative Three: Enhance Community Safety through Safe Parks

This initiative aligns with the City of Kennewick's priority of "Community Safety." Safe parks not only enhance community well-being but create welcoming spaces for residents of all ages to participate in recreational activities with confidence.

Priority objectives include:

- Explore Park Ranger model implemented by regional partners.
- Implement safety measures, including adequate lighting, clear signage, and well-marked paths, to enhance user safety on trails and within park spaces.

QUALITY OF LIFE

Initiative Four: Provide Inclusive Access to Parks, Programs, and Trails

Ensuring all residents have access to parks, programs, and trails enriches the community's quality of life, aligning with the City of Kennewick's central priority. Through comprehensive offerings, KPR serves the diverse needs of all residents contributing to community vitality.

Priority objectives include:

- Adopt a LOS standard of four recreational components in a one-mile proximity. Low-service areas currently account for 7% of land area. These areas, by definition, have service, but the service does not currently meet the goal of four recreational components within a one-mile drive.
 - Develop, partner, or acquire facilities to help bridge the gap between existing and needed recreational facilities, particularly in underserved locations.
 - Initiate a Master Plan for the undeveloped acres at Southridge Sports Complex to enhance southwest Kennewick's recreational offerings.
- Explore the potential of developer land dedication to expand recreational spaces. Collaborate with local planning bodies to establish transparent and equitable criteria for assigning developer land donations.

ECONOMIC DEVELOPMENT

Initiative Five: Leverage the Potential of Recreation as an Economic Driver

This initiative directly aligns with the City of Kennewick's priority for "Economic Development". By focusing on recreation as an economic driver, this initiative acknowledges the significant economic benefits that vibrant recreation offerings can bring to the City. Quality recreational facilities attract visitors, tourists, and businesses to the area, stimulating economic activity. By fostering economic growth through recreation, Kennewick can create new job opportunities, increase revenue streams, and enhance the overall economic vitality of the City.

Priority objectives include:

- Develop a Feasibility Study for the construction of a state-of-the-art recreation center, encompassing facility design, budget allocation, community input, and coordination with relevant stakeholders.
- Conduct a thorough assessment of Kenneth Serier Memorial Pool (KSMP) to determine the need for a new pool facility, including feasibility studies, budget considerations, and community demand. Explore potential collaboration with the Kennewick School District to enhance project viability and impact.
- Develop a Trails Master Plan.
 - Consider a range of trail types to accommodate various activities, including walking, hiking, biking, and jogging.
 - Design trails with universal accessibility in mind, incorporating features like smooth surfaces and gradual slopes.
 - Gather input from trail users and local residents to understand preferences and prioritize improvements based on community needs.
 - KPR should also coordinate with regional partners such as Visit Tri-Cities, the Kennewick Irrigation District, and the Benton-Franklin Council of Governments on regional trail planning, wayfinding, and other projects related to access and nonmotorized transportation and connectivity. Work with the Kennewick Irrigation District, promoting the retrofitting of open canals into underground, pressurized systems to allow the rights of way as accessible pathways and trails.

Visit Tri-Cities aggressively promotes tourism to create a diverse economy for the region. In 2023, events and tournaments hosted in City of Kennewick parks are projected to generate economic activity of approximately \$7.8 million.

The Parks, Recreation Comprehensive Plan (Comprehensive Plan) update considers the park and recreation needs of residents across the City of Kennewick. It provides updated inventories, demographic conditions, needs analysis, management considerations, and capital project priorities. The Comprehensive Plan reflects the community's interests and needs for parks, recreational facilities, trails, and programming. The planning process aimed to encourage and enable public engagement in the choices, priorities, and future direction of Kennewick's park and recreation system.



1.1 Project Purpose

The purpose of this Comprehensive Plan update is to conduct a thorough assessment of and recommend improvements to parks, recreation facilities, and open space in the City of Kennewick. This plan provides guidance for the continued development of the park system, including improvements and expansions to the existing system. The update establishes clear and realistic goals, objectives, and implementation strategies that can guide KPR decision-making for the next six years. The updated plan will position the City in such a way that residents, commuters, and visitors alike see Kennewick as a quality recreation destination within the Tri-Cities.

In February 2023, after a competitive selection process, a consultant team led by BerryDunn, including Bernardo Willis and ETC Institute, was chosen to develop and deliver the 2024 Comprehensive Plan. The process of developing the plan was driven by feedback received from the City of Kennewick, Department of Parks and Recreation (KPR) team members of all levels, park and recreation partners, community partners, and Kennewick residents. The included recommendations can be adapted depending upon available funding and partnership opportunities, while maintaining focus on the elements that Kennewick stakeholders determined to be critical to the long-term success of KPR.

1.2 Play, Connect, Thrive

As part of this planning process, KPR reevaluated its vision and mission, guided by thoughtful discussions, careful examination of planning outcomes, and a deep commitment to improvement. Recognizing the importance of community building and its role in advancing Kennewick's livability goals, KPR has strengthened and defined its future direction. The following vision and mission are the result of input from a facilitated workshop with KPR staff coupled with findings from community engagement, stakeholder interviews, focus group sessions, and survey results. This inclusive approach helped shape the vision of KPR and define its core mission so that it resonates with the desires of the community it serves.

Vision

Enhancing premiere experiences for all through dynamic spaces where connections deepen, and thriving communities create unforgettable memories.

Mission

Intentional development of parks and recreational experiences of the highest quality, ensuring opportunities for all, while focusing on sustainability, fostering community bonds, and creating memories that last a lifetime.

The vision statement emphasizes the idea of enhancing experiences for all individuals through dynamic spaces. This statement is supported by the growing understanding that public spaces,

such as parks and recreational areas, significantly enhance the overall quality of life of residents.

The mission statement outlines the purpose and core values guiding the development of parks and recreational experiences. It supports principles of sustainable development, community engagement, and inclusive recreational opportunities.

Both the vision and mission statements are grounded in the principle of delivering impactful experiences.

1.3 Kennewick Context

Kennewick is a growing city with a diverse economy, rich history, and access to outdoor recreational activities, making it an attractive place to live and visit. Kennewick is fortunate to have spectacular views of the Horse Heaven Hills to the south, Rattle Snake Mountain to the west, the Columbia River to the north, and the broad plains of the Columbia Basin and Blue Mountains to the east.

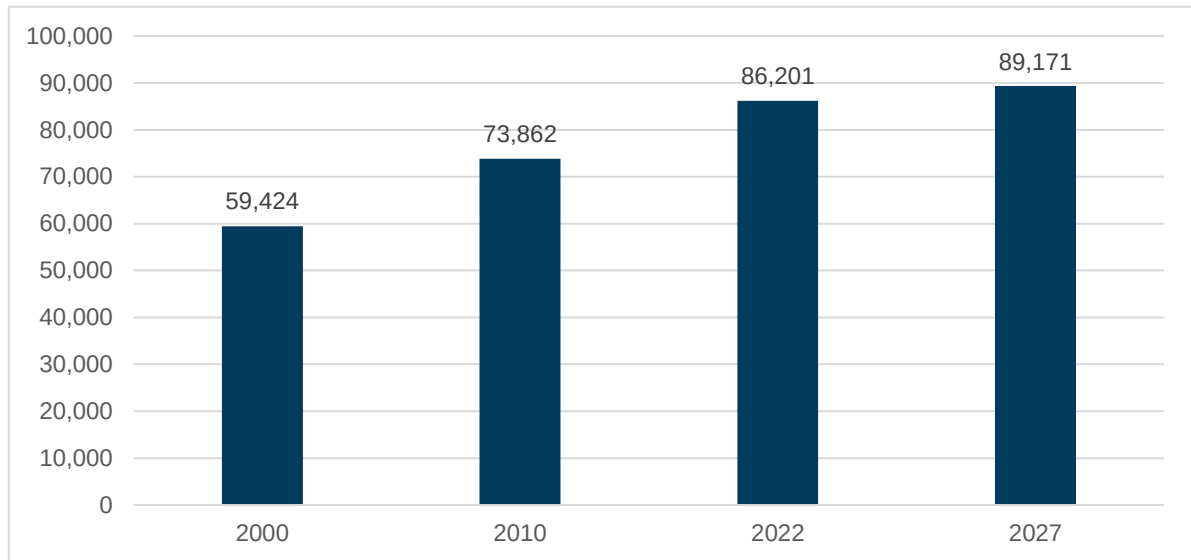
Population and Household Characteristics

Kennewick, Pasco, and Richland together constitute the Tri-Cities area in southeastern Washington. Among these three cities, Kennewick stands as the most populous. The **population** in the City of Kennewick was estimated at 86,201 people in 2022, and is expected to grow to 89,171 people by 2027.



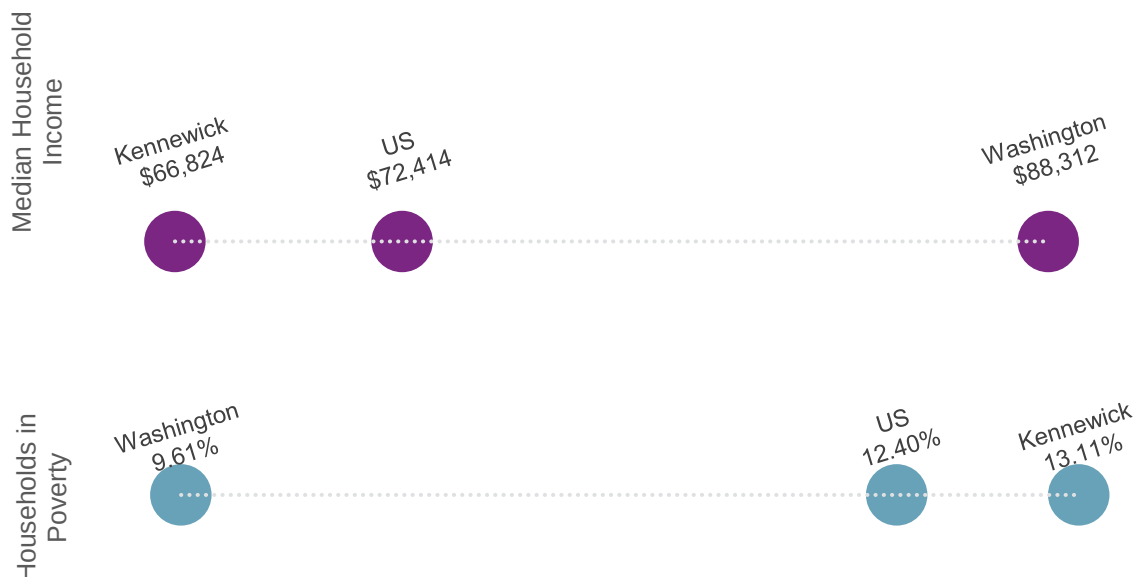
The Kennewick **population is expected to grow** by 0.68% annually from 2022 to 2027, a rate higher than both the State of Washington (0.52%) and the United States (0.25%).

Figure 2: Population Change (2000 to 2027)



The **household characteristics** in Kennewick indicate that the community has a lower median income (\$66,824) than the State of Washington and the United States, and more households in poverty (13.11%) than the State of Washington and the United States.

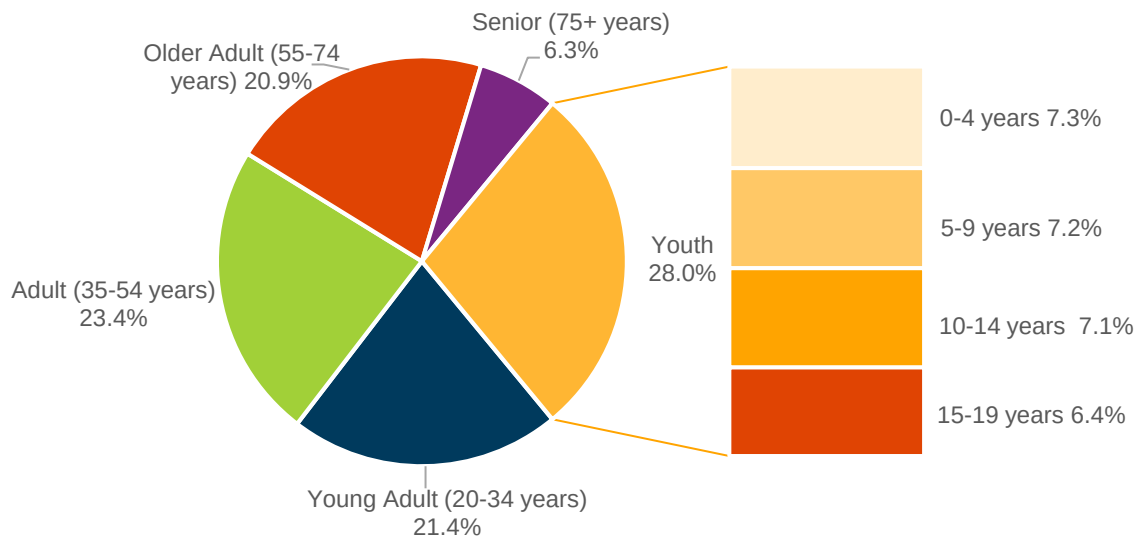
Figure 3: Household Characteristics (2022)



Age Distribution

The **median age of residents in Kennewick was 35.4 years old** in 2022, younger than the median age in the State of Washington (39.0) and the United States (38.9). The age groups making up the largest percentage of the population in the City were youth (0 to 19 years) at 28% and adults (ages 35 to 54 years) at 23%.

Figure 4: Age Distribution (2022)



Over the next five years, the age groups of **older adults, young adults, and youth are expected to shrink in size**, while **adults and seniors are expected to increase**.

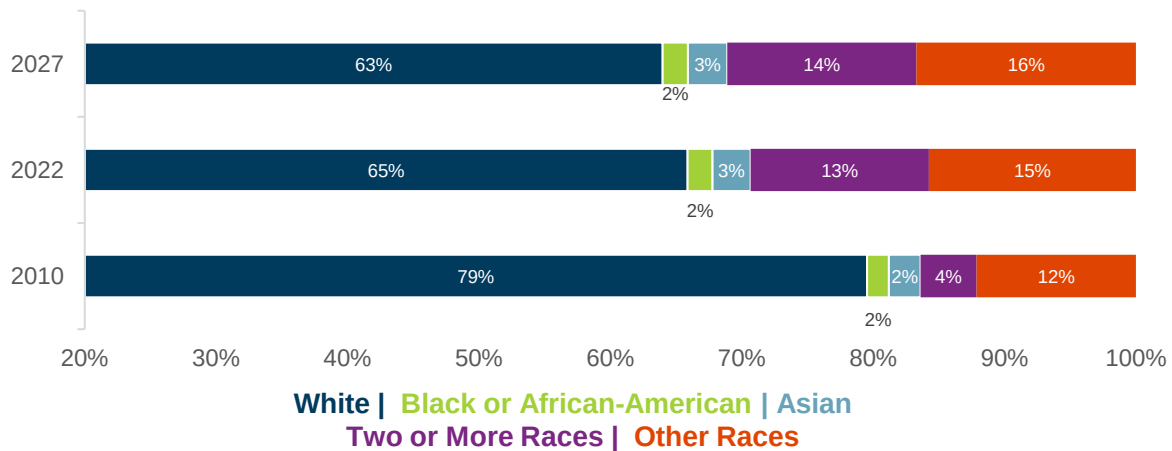
Figure 5: Age Growth Expected by 2027



Racial Diversity

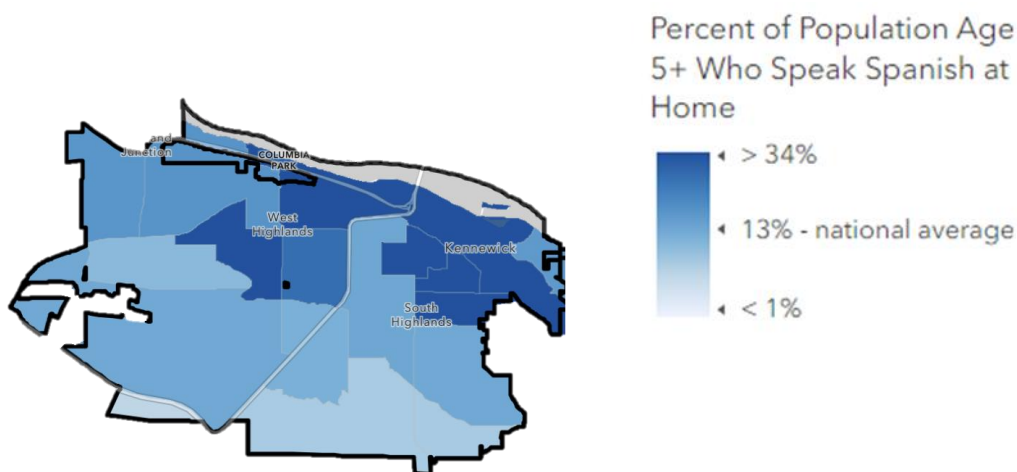
In the City of Kennewick, the demographic makeup is becoming increasingly more diverse. **From 2010 to 2022, the white population decreased by 14%. Those of “two or more races” are making up more of the population** (from 4% in 2010 to 13% in 2022), as well as “other races” not specifically defined in the census.

Figure 6: Change in Racial Diversity (2010 – 2027)



Approximately 24% (or 20,946 residents) in Kennewick speak Spanish. It is estimated that 30% of residents are of Hispanic origin (regardless of race), up from 24% in 2010.

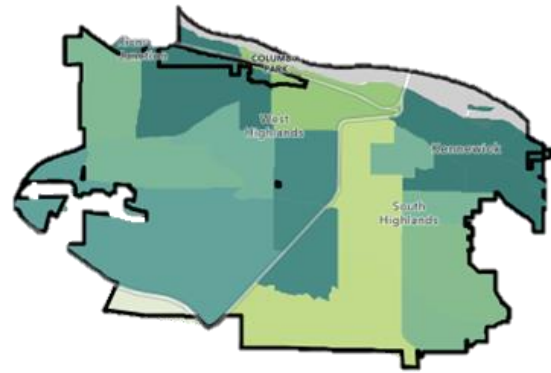
Darker colors in the map represent the percent of population older than five years of age that speak Spanish at home.



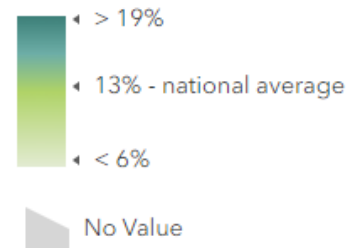
Health and Disabilities

According to the American Community Survey, 18.0% of individuals in the City live with a disability. Data from the American Community Survey indicates:

- Approximately 8%, or 15,516 people, live with a vision or hearing difficulty.
- The City of Kennewick has a growing population with a significant percentage of households in poverty and lower median income, which suggests a potential need for affordable and accessible parks and recreation programs.
- Another 8.1% of the population live with an ambulatory difficulty, which means having serious difficulty walking or climbing stairs.



Percent of population with a disability



Key Findings

The following findings summarize the demographic information with potential impacts to the parks and recreation planning effort in the City of Kennewick:

- The City has a relatively younger population, with youth and adults between the ages of 35 to 54 making up the largest percentage, indicating a potential need for programs and services that cater to these age groups.
- The demographic makeup of Kennewick is becoming more diverse over time, which suggests a need for inclusive programming and services that cater to a variety of cultures and backgrounds.
- A significant percentage of individuals in Kennewick live with a disability, with vision, hearing, or ambulatory difficulties being the most prevalent, indicating a need for facilities and services that are accessible and accommodating to those with disabilities.
- With the expected increase in the adult and senior population, there may be a need for programs and services that cater to the aging population, such as senior fitness programs, community centers, and social programs.

- It may be important to consider the languages spoken at home in Kennewick when planning for programming and services, as the increasing diversity of the City suggests a need for multilingual materials and communication for inclusivity.
- Kennewick's population is increasing, and many households have lower incomes, indicating a possible need for affordable and accessible parks and recreation programs

Chapter Two: Budget, Staffing Assessment, and Benchmarking Review

BerryDunn assessed KPR's staffing structure and operating budget to evaluate its effectiveness and efficiency in meeting current and future community needs. This assessment drew heavily on benchmarks established by the 2023 NRPA Agency Performance Review, along with comparisons against five specific agencies.



2.1 Introduction

The 2023 NRPA Agency Performance Review compiles findings from NRPA Park Metrics, a benchmarking guide for effective resource and capital facilities management in the park and recreation field. This comprehensive data set, derived from over 1,000 unique park and recreation agencies across the U.S., offers insights into industry trends.

NRPA's benchmarks are not meant to impose standards upon each agency; the uniqueness of communities' needs, demographics, and services prevents a one-size-fits-all approach. The characteristics of residents, their preferences, and projected future trends inform the optimal mix of services and facilities an agency should provide.

The agencies selected for the comparative analysis were identified by the City of Kennewick as peer agencies, with data researched and sourced from 2023 budget documents.

The agencies that are compared include:

- Kennewick Parks and Recreation Department
- Auburn Parks, Arts, and Recreation Department
- Kirkland Parks and Community Services Department
- Meridian Parks and Recreation Department
- Pasco Parks and Recreation Department
- Richland Parks and Recreation Department

These cities were selected based on similarities in population size and geographic dimensions. In this study, all participating agencies, except Meridian, share a population below 100,000 residents, with Kennewick boasting 86,201 residents as of 2022. Geographically, the agencies vary from 23 square miles (Richland) to 43 square miles (Meridian), with Kennewick occupying an intermediate position at 28 square miles. This strategic selection provides context for the comparative analysis that closely aligns with Kennewick's demographic and geographic characteristics.

Table 1: Comparative Analysis – Population and Size

Agency	Population	Square Miles
Richland Parks and Recreation Department	63,099	23
Auburn Parks, Arts, and Recreation Department	79,365	30
Pasco Parks and Recreation Department	80,646	27
Kennewick Parks and Recreation Department	86,201	28
Kirkland Parks and Community Services Department	92,165	24
Meridian Parks and Recreation Department	124,700	43

2.2 Organizational Context

KPR's organizational structure outlines the activities and duties the department must take to achieve its goals. Its structure is the foundation on which its operating procedures and daily routines stand. KPR's organizational functions are spread across three divisions: the Park and Facilities Services, Recreation Services, and Capital Improvement Services divisions. These divisions are supported by Administrative Services, which provides centralized support. Figure 7 maps KPR's organizational structure.

Figure 7: KPR Organizational Structure



The **Recreation Services Division** offers comprehensive year-round recreation programs, special events, enrichment programs, and aquatics. This division operates and manages the KSMP, Numerica Pavilion, Keewaydin Community Center, Keenewick Activity Center, and Highlands Grange Building. Additionally, it coordinates almost 100 special event permits annually and hosts over 25 tournaments each year at the Southridge Sports and Events Complex. It oversees guest services operations and manages various business service functions, including facility and field scheduling.



Full-Time Equivalent Employee (FTE) Analysis

Staff levels differ across park and recreation agencies. The 2023 NRPA Agency Performance Review finds the typical park and recreation agency includes 51.5 FTEs, with a mix of both full- and part-time staff. Staff size, however, varies significantly based on the size of the population served. Park and recreation agencies serving jurisdictions of 50,000 to 99,999 residents have a **median** of 75.8 FTEs on staff. Fiscal Year 2023 staffing for KPR consists of 44.7 FTEs.

Another way NRPA evaluates agency staffing is to measure staffing in relation to service population. The typical park and recreation agency has 8.9 FTEs on staff for every 10,000 residents in the jurisdiction served. Agencies in less populated areas tend to have more FTEs on staff per population. Agencies serving jurisdictions between 50,000 to 99,999 residents have a median of 11.2 FTEs for every 10,000 residents. KPR operates with 5.2 FTEs per 10,000 residents. The low quartile is 6.6 FTEs for every 10,000 residents. KPR, serving a population of 86,201, operates with a staff of 44.7 FTE. Notably, this staffing level is about 12 FTEs lower than the lowest quartile of reporting agencies.

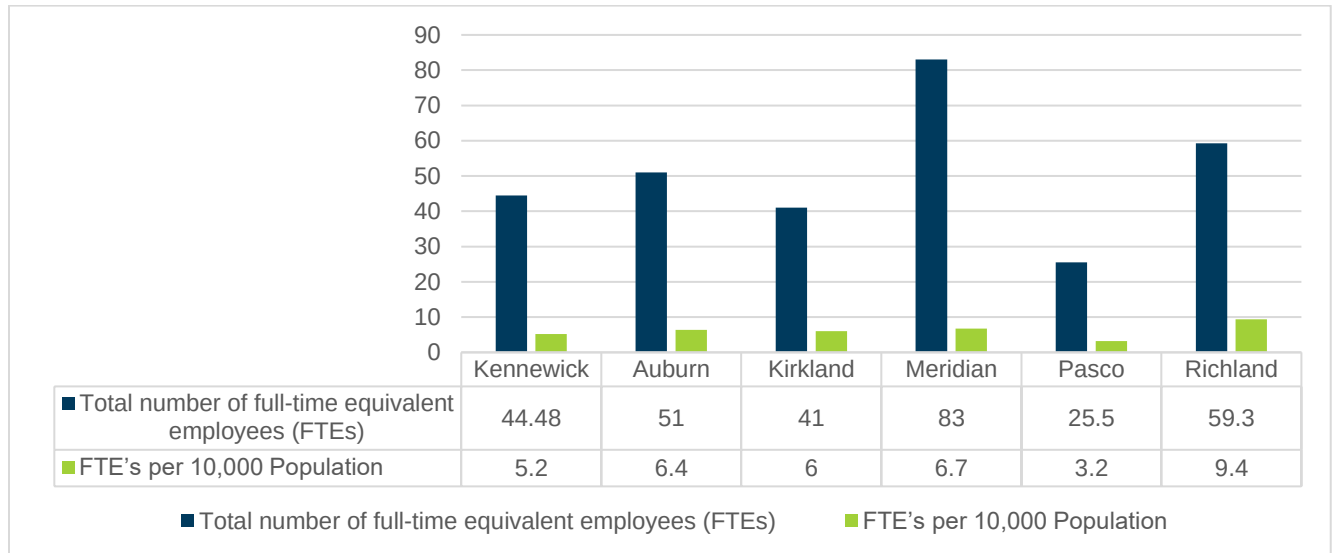
Table 2 illustrates the period between 2019 and 2023 when the FTE workforce growth at KPR remained stagnant, while the population expanded from approximately 81,000 to 86,000. Notably, in both 2020 and 2021, KPR had two more FTEs than its current count. A key observation is that the growth has been confined primarily to the Recreation Services Division, which saw an increase of 4.84 FTEs. However, it is important to highlight that this growth pertains exclusively to part-time seasonal Program Specialists and Lifeguards

Table 2: FTE Count

Division	2019	2020	2021	2022	2023	Net Change in FTEs
Executive Office	2.34	3	3	2	1	(1.34)
Administrative Services	4.3	3.8	3.8	3	4	(0.3)
Capital Improvement Services	2	2	2	1	.5	(1.5)
Park and Facilities Services	22	20	20	20	21.5	0.5
Recreation Services	12.84	17.68	17.68	17.8	17.68	4.84
Total	43.48	46.48	46.48	44.68	44.68	1.2
FTE per 10,000 residents	5.0	5.4	5.4	5.2	5.2	.02

In Figure 8, agency-specific benchmarking reveals an average FTE count of 7.4 per 10,000 residents.

Figure 8: Comparative Analysis – FTE Count



By adding 12 FTEs, KPR can achieve an FTE count of 6.6 per 10,000 residents, aligning with the lower-quartile average identified in the 2023 NRPA Agency Performance Review. The following 8 positions (12 FTE) have been identified as priority positions to be added within the next six years:

Executive Office:

- **Deputy Parks and Recreation Director (1.0 FTE)**

Assist the Parks and Recreation Director in overseeing the planning, development, and maintenance of parks, facilities, and recreational activities. The Deputy Director works closely with the Director to implement strategic initiatives, promote community engagement, and help ensure the effective operation of parks and recreation services.

Administrative Services:

- **Guest Services Specialist (1.0 FTE)**

Supports the smooth operation of the department by providing administrative support, facilitating communication, and helping to ensure efficient coordination of activities and resources.

- **Strategic Partnerships Manager (1.0 FTE)**

Enhance the quality and reach of park and recreation programs through effective volunteer engagement and strategic community partnerships.

Park and Facilities Services:

- **Crew Leader (3.0 FTE)**

Responsible for managing and leading a team of workers engaged in various maintenance and operational tasks related to parks, recreational areas, events, and public spaces.

- **Park Ranger (2.0) FTE**

Park Rangers play a critical role in preserving the environment, supporting visitor safety, and providing educational programs and information to visitors.

- **General Craftsperson (2.0 FTE)**

Actively engage in hands-on maintenance tasks, addressing immediate maintenance needs and enhancing the overall upkeep of facilities.

Recreation Services:

- **Program Coordinator (1.0 FTE)**

Design recreational programs that synergize with community spaces, optimizing usage and well-being.

Capital Improvement Services:

- **Project Supervisor (1.0 FTE)**

Manage procurement and contracting processes efficiently, allowing for cost-effective and timely execution of maintenance projects. Monitor budget allocations, helping to ensure funds are channeled toward critical deferred maintenance projects.

These positions have been recognized as crucial roles that significantly contribute to the effective functioning of the organization. The order of position priority is as follows:

1. Project Supervisor (1.0 FTE)
2. Crew Leader (1.0 FTE)
3. Strategic Partnerships Manager (1.0 FTE)
4. Guest Services Specialist (1.0 FTE)
5. General Craftsperson (2.0 FTE)
6. Crew Leader (2.0 FTE)
7. Park Ranger (2.0 FTE)
8. Deputy Parks and Recreation Director (1.0 FTE)
9. Program Coordinator (1.0 FTE)

Upon adopting the Comprehensive Plan, a Project Supervisor, a Crew Leaders, Strategic Partnership Manager and a Guest Services Specialist should be added to KPR staff to address immediate department needs.

Figure 9: Future Organization Structure



2.3 Financial Assessment

The KPR budget is prepared on a biannual basis, for the year that begins January 1 and ends December 31. The general fund is the primary operating fund, which accounts for all financial and general revenues and expenditures. Table 3 provides the most recent general fund budget information.

Table 3: General Fund Budget

	2019/2020	2021/2022	2023/24
General Fund	\$10,959,496	\$12,044,555	\$12,900,544
Columbia Park Golf Course	\$1,238,894	\$922,500	\$1,037,500
Total	\$12,198,390	\$12,967,055	\$13,938,044

KPR's budget has grown over the past three budget cycles, with its general fund budget increasing by 15% since 2019.

Per Capita Spending

Normalizing operating expenditure data by the agency's service population is a meaningful way of articulating and comparing spending. By this measure, the 2023 NRPA Agency Performance Review finds the typical park and recreation agency has annual operating expenses of \$94.77 on a per capita basis. This measurement marks noncapital (i.e., for operational, services, and materials) dollar spending for each person living in a service area. In 2022, the median quartile spending for peer parks and recreation agencies catering to a population of 50,000 – 99,999 stood at \$121 per person within their service area. KPR's projected expenditure for 2023 is \$88 per capita. Notably, the low quartile spending for agencies serving a population of 50,000 – 99,000 amounted to \$73.64 per capita. While KPR surpasses the low quartile spending benchmark, there remains a \$33 difference from the median quartile spending level.

In Figure 10, agency-specific comparative analysis reveals an average per capita spending of \$124. Kennewick is spending approximately \$36 less per capita than similar agencies.

Figure 10: Comparative Analysis – Per Capita Spending



Operating Expenditures Per Acre

Operating expenditures can be normalized by the amount of parkland an agency manages. According to the 2023 NRPA Agency Performance Review for a typical agency, the median operating expenditure is \$7,388 per acre of park it manages. Agencies serving larger populations tend to have lower operating expenditures than those serving small- and medium-sized jurisdictions. The typical park and recreation agency serving a jurisdiction of fewer than 20,000 people spends a median of \$7,495 per acre of park and non-park sites. **The median increases to \$9,108 per acre for agencies serving jurisdictions with populations between 50,000 and 99,999**, but then declines to \$3,970 per acre managed for those serving more than 250,000 people.

KPR maintains 684 developed acres of parkland. Operating expenditures per acre are calculated by dividing total park-related operating expenditures by total parkland acres managed. KPR is projected to spend \$4,026 per acre in 2023. Given the existing budget allocation, achieving a spending level of \$8,106 is not feasible. For this analysis, aiming to match the low quartile spending of peer agencies is a more practical objective for KPR. The 2023 NRPA Agency Performance Review low quartile spending for jurisdictions with populations between 50,000 and 99,999 is \$5,434 per acre. This analysis finds KPR is spending 26% less than peer agencies when this metric is applied.

Table 4: Per-Acre Spending Comparison

	Variables	Variance From Park Metric	Percentage Difference	Budget Difference
2023 Maintenance and Operations Budget	\$4,936,000			
Total Acres	684			
2023 Operating Expenditure per Acre	\$4,026			
Park Metric Low Quartile	\$5,434	(\$1,408)	(26%)	(\$982,734)
Park Metric Median Quartile	\$9,108	(\$5,082)	(56%)	(\$3,547,236)
Park Metric Upper Quartile	\$20,564	(\$16,538)	(80%)	(\$11,543,524)

Capital Budget Spending

Beyond day-to-day operations, the 2023 NRPA Agency Performance Review found park and recreation agencies have a median of \$10 million in capital expenditures budgeted for the **next five years**. Not surprisingly, the larger the agency, the larger its five-year capital budget. The

typical park and recreation agency serving a population of 50,000 to 99,999 has a **low quartile five-year capital budget of \$6 million**. Five-year capital budgets increase greatly as the service population increases—to nearly \$43 million for those with more than 250,000 residents.

The 2023 KPR Capital Investment Plan (CIP) stands at around \$650,000. If KPR maintains this level of annual CIP investment, it will amount to \$3.2 million in capital investments over the next five years—half the investment made by peer agencies.

When a park or facility lacks sufficient funds for capital improvements, necessary repairs and upgrades are postponed, resulting in deferred maintenance. This postponement can lead to deterioration, increased repair costs over time, and a decrease in the overall quality of the park or facility. An undersized capital improvement budget can contribute to a growing backlog of deferred maintenance issues.

Chapter Three: Community and Identified Needs

Community engagement played a pivotal role in the Comprehensive Plan update process, enabling an understanding of the present values and priorities of Kennewick residents. Soliciting community input has been integral in identifying the most frequently utilized facilities, pinpointing essential requirements, and gauging the preferred emphasis on recommendations. Throughout the planning phase, BerryDunn used diverse approaches to gather community insights, including presentations to the Park and Recreation Commission, user-focused group sessions, stakeholder interviews, and a community-wide, statistically-valid survey. The recommendations outlined in the 2024 Parks and Recreation Comprehensive Plan Update are strategically aligned to mirror the recreational desires and preferences of Kennewick residents.

Key findings highlight strong support for KPR, a desire for partnership development, and a focus on enhancing indoor facilities and trails. Priorities for investment were identified in areas such as trails, aquatic, and waterfront access.



3.1 Stakeholder Interviews

BerryDunn interviewed individual stakeholders to identify pertinent concerns associated with recreation facilities and programs within the City. These interactions revealed a shared enthusiasm and endorsement for KPR, evident in their valuable insights into significant matters and contributions to devising strategies for an enhanced overall system. Recurring themes encompassed the necessity for a forward-looking plan that helps ensure the KPR's sustainability, increased indoor facilities and trails, and a strategic approach that acknowledges the importance of fostering partnerships.

3.2 Focus Group Sessions

In May 2023, BerryDunn orchestrated three focus group sessions to glean insights from user groups regarding current strengths, opportunities, and priorities. The objective was also to determine whether KPR effectively meets resident needs. A series of questions facilitated comprehensive input from all participants. The collective sentiment from the focus groups highlighted a community-wide consensus on KPR's responsiveness and receptiveness. Strengths were acknowledged in the form of the number and variety of parks available. Conversely, participants acknowledged maintenance as a weakness. Looking ahead to the next 5 to 10 years, there was a prevailing desire for KPR to amplify its focus on trail development. Preservation of existing assets emerged as an additional key priority emphasized by participants.

3.2 Needs Assessment Survey

ETC Institute administered a parks and recreation Needs Assessment Survey for KPR during the spring of 2023. ETC Institute mailed a survey packet to a random sample of households in Kennewick. Each survey packet contained a cover letter, a copy of the survey, and a postage-paid return envelope. Residents who received the survey were given the option of returning the survey by mail or completing it online at [KennewickSurvey.org](https://kennewicksurvey.org).

After the surveys were mailed, ETC Institute followed up by sending text messages and mailing postcards to encourage participation. The text messages and postcards contained a link to the online version of the survey to make it easy for residents to complete the survey. The goal was to collect a minimum of 400 completed surveys from residents. The goal was met with 414 completed surveys collected. The overall results for the sample of 414 households have a precision of at least ± 4.8 at the 95% level of confidence.

Survey Findings

Use of Parks and Facilities

Most respondents (91%) indicated that they had used parks, the recreation center, golf courses, Numerica Pavilion, or other facilities owned and maintained by the City of Kennewick during the past year. Of those who had visited those areas, most (74%) rated the overall quality as either good (56%) or excellent (18%).

Barriers to Use

Respondents most often listed a lack of features they wanted to use (31%), lack of restrooms (28%), and not feeling safe using the parks/facilities (25%) as major barriers to use.

Satisfaction with Parks

Respondents were asked to rate their level of satisfaction regarding 12 aspects of parks. Respondents were most satisfied (rating “satisfied” or “very satisfied”) with the adequacy of parking at parks (72%), maintenance of parks (63%), and quality of outdoor athletic fields and courts (53%). **Respondents feel the most emphasis should be placed on the safety of parks (49%), maintenance of parks (44%), and quality of swimming pools (30%) over the next five years.**

Communications

Respondents most often use the KPR website (KennewickRecreation.com) (59%), social media (51%), or word of mouth (50%) to learn about KPR news, events, programs, and activities. Respondents would most prefer to use the website (56%), social media (50%), email (26%), or television (24%).

Willingness to Volunteer

Respondents were asked to select all the ways they would be interested in getting involved with volunteer work and advocacy with the City’s park system. Respondents were most interested in being special event volunteers (44%), getting involved with nature programming and education (37%), and joining friends of the park or a board of commission meeting (32%).

Agreement with Benefits

Respondents were asked to rate their agreement with 11 statements regarding potential benefits of parks and recreation services. **Respondents most agreed (selecting “agree” or “strongly agree”) that park and recreation services improves the overall quality of life in the City (85%), improves the health/wellbeing/fitness of residents (82%), and helps preserve open space and the environment (82%).** These were also the three items most important to households. Improving the quality of life in the City (42%), contributing to a sense of community (33%), and improving health/wellbeing/fitness of residents (29%) were the three areas respondents said were most important to the future of the City.

Support for Improvements

Respondents would most support (rating “somewhat supportive” or “very supportive”) improving/adding restroom facilities (86%), improving existing parks infrastructure (85%), and improving/expanding the existing trail system (84%). **The three improvements most important to households are improving existing parks infrastructure (49%), developing an indoor aquatic center (40%), and developing new multi-use recreation facilities (37%).**

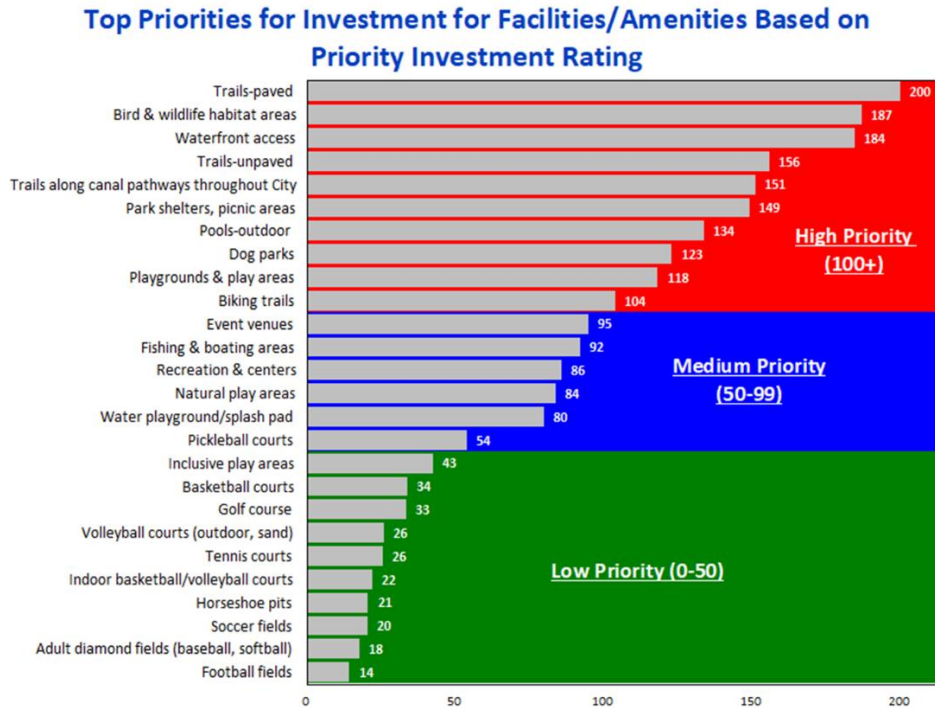
Priorities for Facility Investments

The Priority Investment Rating (PIR) was developed by ETC Institute to provide organizations with an objective tool for evaluating the priority that should be placed on recreation and parks investments. The PIR equally weighs (1) the importance that residents place on amenities and (2) how many residents have unmet needs for the amenity. Based on the PIR, the following parks and recreation facilities/amenities were rated as high priorities for investment:

- Trails—paved (PIR= 200)
- Bird and wildlife habitat areas (PIR= 187)
- Waterfront access (PIR= 184)
- Trails—unpaved (PIR= 156)
- Trails along canal pathways throughout City (PIR= 151)
- Park shelters, picnic areas (PIR= 149)
- Pools—outdoor (PIR= 134)
- Dog parks (PIR= 123)
- Playgrounds and play areas (PIR= 118)
- Biking trails (PIR= 104)

The chart below shows the PIR for each of the 26 recreation facilities assessed on the survey.

Figure 11: PIR for Facilities and Amenities



Priorities for Program Investments

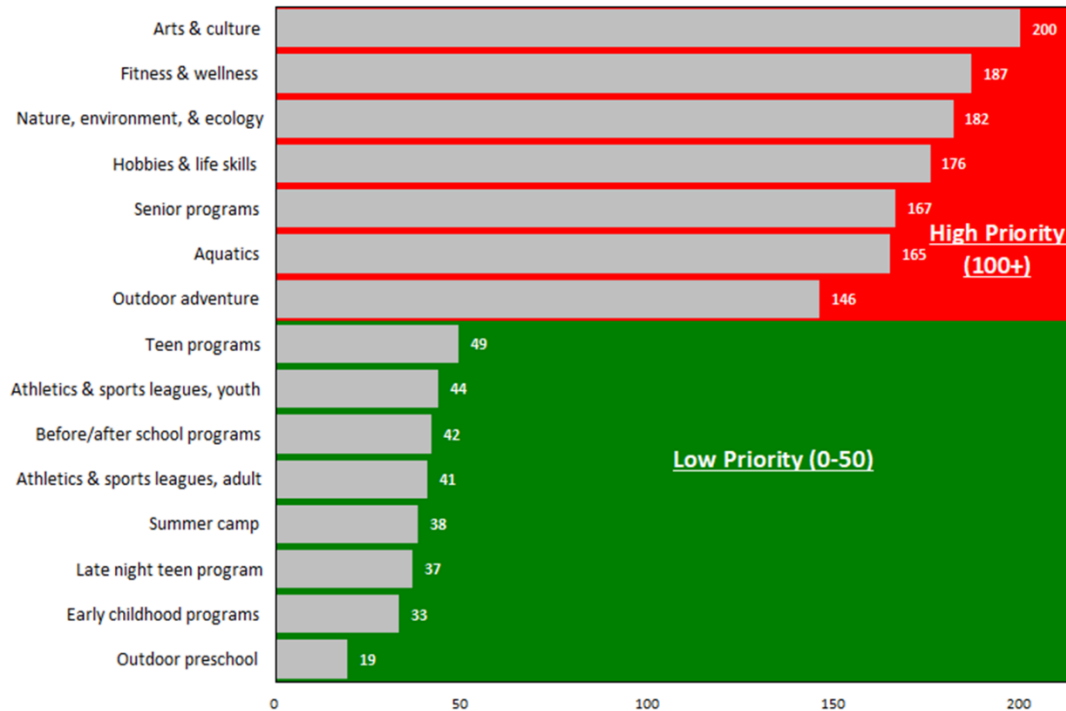
The program investments PIR equally weights the importance residents place on a program and the unmet needs for the program. Based on the PIR, the following KPR programs were rated as high priorities for investment:

- Arts and culture (PIR=200)
- Fitness and wellness (PIR=187)
- Nature, environment, and ecology (PIR=182)
- Hobbies and life skills (PIR=176)
- Senior programs (PIR=167)
- Aquatics (PIR=165)
- Outdoor adventure (PIR=146)

Figure 12 shows the PIR for each of the 15 programs assessed.

Figure 12: PIR for Programs

Top Priorities for Investment for Activities, Programs, and Events Based on Priority Investment Rating



Chapter Four: Facility Inventory and Level of Service (LOS) Analysis

LOS describes how a recreation system provides residents access to recreational assets and amenities. LOS indicates the ability of people to connect with nature and pursue active lifestyles, often reflects community values, and can have implications for health and wellness, the local economy, and quality of life.



4.1 Introduction

To help standardize parks and recreation planning, many parks and recreation professionals look for ways to benchmark and meet national standards. These standards might include how many acres, ballfields, pools, and playgrounds a community should have. In 1906, the fledgling Playground Association of America called for playground space equal to 30 square feet per child. In the 1970s and early 1980s, the first detailed published works on these topics began emerging (Gold, 1973; Lancaster, 1983). In time, “standard measurement” ratios emerged, with 10 acres of parklands per 1,000 becoming the most widely accepted norm. Other normative guides also have been cited as traditional standards but have been less widely accepted. In 1983, Roger Lancaster compiled a book called *Recreation, Park and Open Space Standards and Guidelines* published by the NRPA. Lancaster centered on a recommendation “that a park system, at minimum, be composed of a core system of parklands, with a total of 6.25 to 10.5 acres of developed open space per 1,000 population” (Lancaster, 1983, p. 56). The guidelines further recommended an appropriate mix of park types, sizes, service areas, acreages, and standards regarding the number of available recreational facilities per 1,000 people. The table became widely known as “the NRPA standards”, but these were never formally adopted for use by the NRPA.

Since that time, publications have updated and expanded upon possible standards, several of which the NRPA has published. Many of these publications did benchmark and other normative research to determine what an average LOS should be. Organizations such as NRPA and the American Academy for Park and Recreation Administration have focused on accreditation standards for agencies. These standards have been less directed toward outcomes and performance and more on planning, organizational structure, and management processes. NRPA standards for LOS do not exist.

Although the above standards can be valuable when referenced as norms for capacity, they are not necessarily the target standards for which a community should strive. Each agency is different, and the criteria above do not address several factors. For example:

- Does developed acreage include golf courses? What about indoor and passive facilities?
- What are the standards for skateparks? Ice arenas? Public art?
- What if it is an urban land-locked community? What if it is a small town surrounded by open federal lands?
- What about quality and condition? What if there are many ballfields, but they are not maintained?

Geo-Referenced Amenities Standards Program® (GRASP®)

Parks, trails, recreation, and open space are part of an overall infrastructure for a community and are made up of various components, such as playgrounds, multipurpose fields, and passive areas. A methodology for determining the LOS is appropriate to address these and other

relevant questions. Composite-values methods can be applied to measure and portray the service provided by parks and recreation systems. The trademarked name for the composite-values methodology process is called GRASP®.

This methodology records each park component's geographic location, quantity, and capacity. It also uses comfort, convenience, and ambiance as characteristics that are part of the context and setting of a component. They are not characteristics of the element itself, but they enhance the value when they exist. Combining and analyzing each component's composite value makes it possible to measure the service provided by a parks and recreation system from various perspectives and for any given location. Typically, this begins with deciding on relevant components, collecting an accurate inventory of those components, and conducting analysis.

4.2 Inventory Methods and Process

In March 2023, BerryDunn used mobile tablets preloaded with GIS data to conduct site assessments at KPR parks, trails and open spaces. The inventory for this study focused primarily on components at outdoor public spaces. The following information was collected during site visits:

- Component type and geo-location
- Component functionality
- Assessment scoring is based on the condition, size, site capacity, and overall quality
- The inventory team used the following four-tier rating system to evaluate park components:
 - 0 = Nonfunctioning
 - 1 = Below Expectations
 - 2 = Meets Expectations
 - 3 = Exceeds Expectations
- Components were evaluated from two perspectives:
 - The value of the component in serving the immediate neighborhood
 - The value of the component to the greater community
- Neighborhood Score:
 - Each component was evaluated from the perspective of a resident who lives nearby
 - High-scoring components are easily accessible to pedestrians in the neighborhood, are attractive for short and frequent visits, and are unobtrusive to the surrounding neighborhood

- Low-scoring components may have limited access to residents such as locked gates, have nuisance features such as sports lighting, or draw large crowds for which parking is not provided
- Community Score:
 - Components were evaluated from resident perspectives in the greater community
 - High-scoring components in this category may be unique components within the parks and recreation system, have a broad draw throughout the community, have the capacity and associated facilities for community-wide events, or are in areas accessible only by car
 - An example of low-scoring components may be when a park's components are limited to only homeowner association (HOA) residents
- Site Modifiers:
 - In addition to standard components, the inventory also evaluates features that provide comfort and convenience to users
 - These are things a user might not go to the parks specifically to use, but are aspects that enhance their experience by making it a nicer place to be
 - Modifiers encourage people to stay longer and enjoy the components more fully
 - The presence of features such as water fountains, shade, seating, and restrooms in proximity to a component increases the component's value
 - These features are scored as described above with the 0 – 3 system; scoring focuses on service to the user rather than the quantity

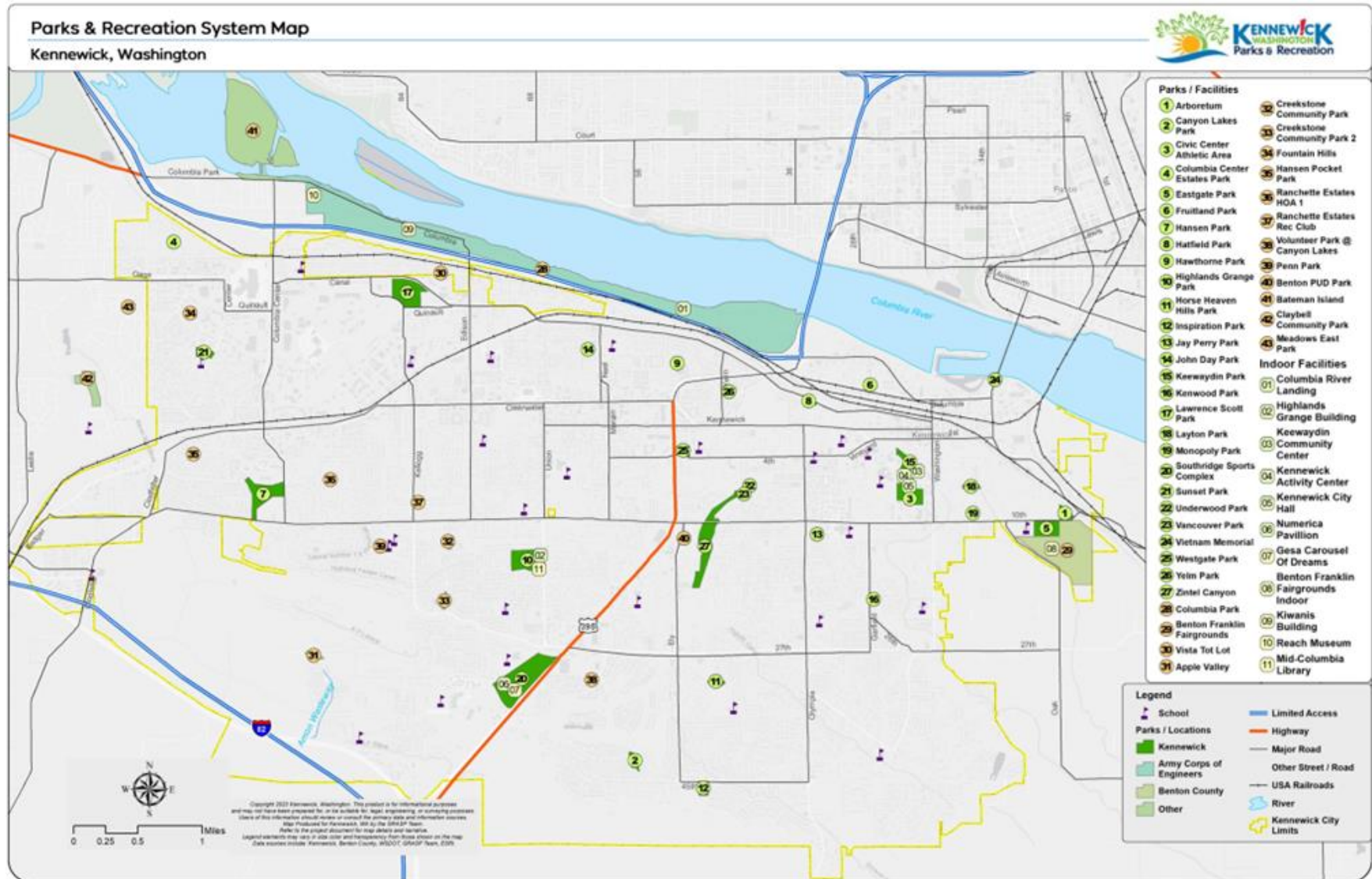
After the site visits, a scorecard and inventory map were created for each facility. Following review and approval of park scorecards and inventory maps by KPR, a GRASP® Inventory Atlas was created. The Atlas is provided as a supplemental document to the Comprehensive Plan update.

KPR System

KPR maintains 25 developed parks of varying sizes and intended uses. The City's two major regional parks are Columbia Park and the Southridge Sports and Events Complex. The 431-acre Columbia Park includes 5.5 miles of riverfront trail and a designated 70-acre regional linear park (the levee and Duffy's Pond Rivershore).

The system inventory map shows the relative size and distribution of existing parks and recreation facilities in and near the City of Kennewick. Green parcels represent parks. Map 1 also displays paths, trails, indoor facilities, other service providers, and schools. The map legend contains the complete list.

Map 1: System Map



Park Classifications

While NRPA provides definitions for park classifications, it also acknowledges that each community is unique in terms of geographical, cultural, and socioeconomic makeup. As such, each community or park agency should develop its own standards for recreation, parks, and open space, with NRPA definitions as a guide.

As a means of organizing the City's public open space facilities, park areas are classified according to a hierarchy that provides for a comprehensive system of interrelated parks. All parks can be placed into specific categories or classifications. Some parks that meet neighborhood needs and have specialized amenities could be placed into more than one classification but are placed in the classification that meets the broadest definition. The park and open space classifications that are appropriate for KPR do not necessarily meet the NRPA guidelines in a strict sense as far as size or amenities, but they are appropriate to the overall offerings of the City. The KPR classifications are as follows:

- Neighborhood Parks (fewer than 25 acres)
- Community Parks (25 – 99 acres)
- Premiere Parks (100+ acres)
- Special Use Parks
- Natural Parks

Neighborhood Parks

In Kennewick, neighborhood parks are the most essential units of the park system and serve as the recreational and social focus of the neighborhood. Seventeen parks in the KPR system are classified as neighborhood parks. These parks typically include a playground, picnic areas, athletic fields or courts, open space, or other amenities. Kennewick neighborhood parks range in size from as small as the 0.06-acre Jay Perry Park to the 25-acre Hansen Park. Neighborhood parks serve an area within a 10-minute walk time or half-mile radius uninterrupted by major roads or other barriers. The desirable size is 3– 24 acres, but may be reduced based on neighborhood need.

Community Parks

Community parks are diverse in nature, serving a broader purpose than neighborhood parks. While community parks may include neighborhood park amenities—and act as neighborhood parks—the focus of a community park is on meeting community-based recreation, athletics, and open space needs. These parks may contain significant athletic complexes, aquatic amenities, walking paths, picnic areas, and various other active and passive amenities depending upon community needs and site suitability. In some cases, a park with only a single athletic field that provides a venue for community athletic organizations may fall into this category regardless of

its small size. The community park may also be the venue of an activity or amenity that has broad community appeal but does not fit the “special use” designation.

Community parks usually serve multiple neighborhoods, with special amenities serving all City residents. For this park type, 25 acres or more are preferred, but special amenities of community interest or athletic fields that provide for the community as a whole may be on much smaller sites. Seven parks in the KPR system are classified as community parks. The desirable size is 25 – 40 acres.

Premiere Parks

Regional parks are large park sites developed for organized play that generally contain a wide array of both passive and active recreation facilities and appeal to a diverse group of users. Regional parks provide a large expanse of open land designed to provide natural scenery and unique features of citywide and regional interest. They also offer pleasant environments and open space to engage in active and passive recreation. Effective utilization of woodlands, open lands, meadows, and, particularly, water features, are important to the design. The desirable size is 100 acres or more.

Columbia Park

The 431-acre Columbia Park, initially developed by the Army Corps of Engineers and Benton County, lies on the Kennewick side of the Columbia River. On March 21, 2000, the City completed the Master Development Plan for Columbia Park, which outlined future potential and standards for development of this regional asset. The plan and subsequent updates are incorporated into this Comprehensive Plan update document by reference. In addition, the 70-acre riverfront area from SR-395 to the Kennewick-Pasco Intercity Bridge—which encompasses the riverfront levee, associated uplands, and Duffy’s Pond—is considered part of the regional park service area. The Riverfront Master Plan II and the West End Master Plan address much of the future redevelopment at the site.

Southridge Sports and Event Complex

In March 2012, the Southridge Sports and Events Complex opened to the public. The complex provides sports fields and a 30,000-square foot pavilion that houses three full-size basketball and multisport courts and a multipurpose room. It also hosts the Carousel of Dreams facility. An additional 10 acres adjacent to the facility is currently undeveloped but available for future growth and expansion.

Special Use Parks

Special use parks cover a broad range of specialized park and recreation facilities, often with a single major use. Golf courses, historical sites, sports complexes, community center sites, and other special use facilities fall into this category. These parks may also include neighborhood or community park elements, but with amenities that have a regional appeal to visitors from outside City boundaries. The size of the park or facility site can vary significantly based on the needs of the facility. The Vietnam Memorial and Arboretum are classified as special use parks.

Natural Parks

Open space areas are acquired to preserve the natural, unspoiled character of a particular location or geographic feature. These areas are typically important habitat conservation or environmentally-sensitive areas such as wetlands, shorelines, forest lands, and stream corridors. Passive recreation uses are appropriate for these sites, such as walking, bird watching, interpretive educational programs, and signage. Limited parking may be provided to support passive recreation needs with other support facilities, such as shelters and restrooms.

The desirable size is 25 acres or more, but smaller areas are acceptable, especially in developed areas, where the preserved open space is protecting environmentally-sensitive features. Smaller areas are encouraged to be maintained and protected through an HOA.

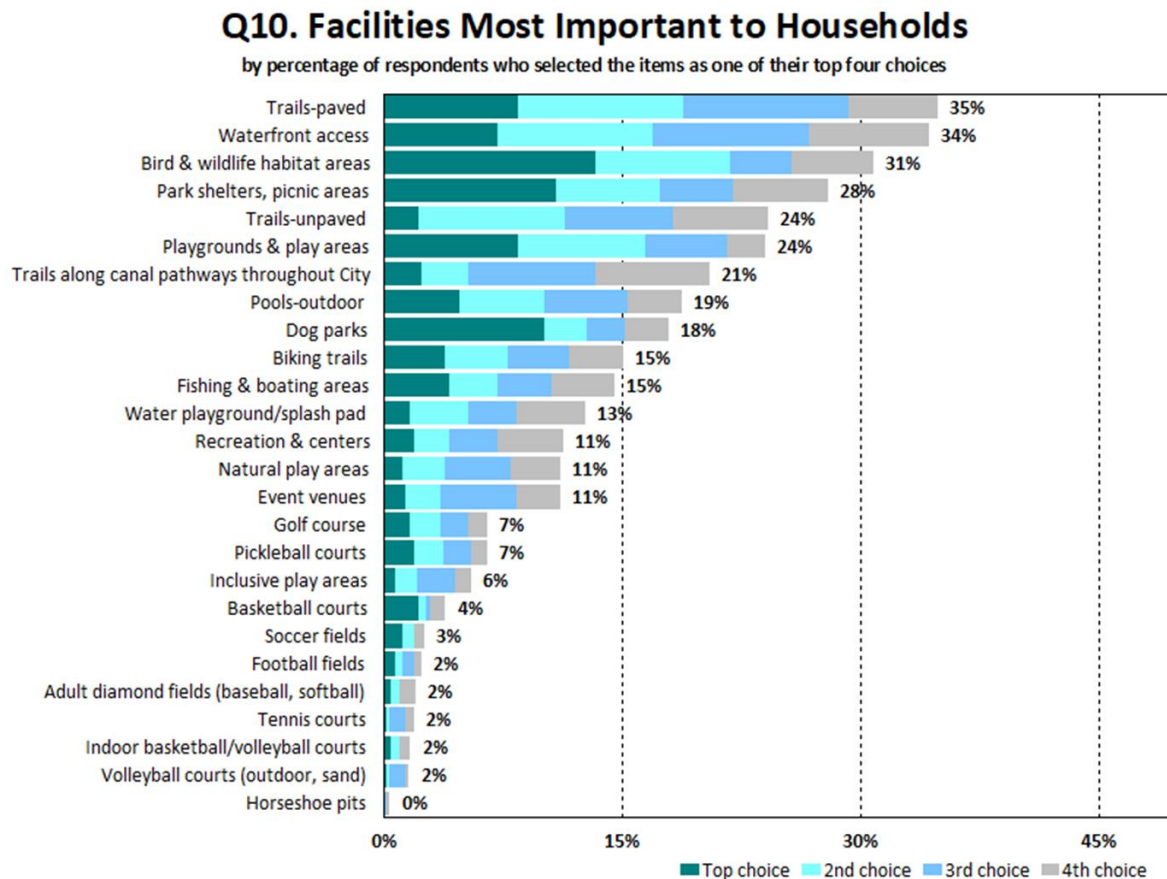
Trail Corridors

Trail corridors provide access to park sites, environmental areas, community facilities, commercial districts, and residential neighborhoods. Trail corridors are linear parks that may have local and regional significance.

In recent years, much attention has been given to urban and non-urban trail development in the Tri-Cities. Trail development by definition should include provisions for bicycles, pedestrian, horseback riding, hiking, or other compatible trail type activities. Recent highway construction has created additional pathways from Richland to Kennewick; both Kennewick and Pasco have lowered the river levees and developed a wide meandering surfaced pathway along the top of the lowered levees.

In focus group sessions and one-on-one discussions, trail access is a reoccurring theme that the City will need to address. It is vital to take a holistic approach to trail access and connectivity. The community survey assessed the importance residents placed on 26 facilities and amenities. Based on respondents' top four choices, trails ranked most important. The percentage of residents who selected each facility/amenity as one of their top four choices is shown in the chart below.

Figure 13: Community Survey – Facility Importance



To facilitate increased trail access, cooperation and coordination with the City's Transportation, Engineering, and Public Works Divisions are essential. Additionally, KPR should collaborate with regional partners like Visit Tri-Cities, the Kennewick Irrigation District, and the Benton-Franklin Council of Governments for regional trail planning, wayfinding, and other access-related projects. Exploring the possibility of converting open irrigation canals into underground pressurized systems for use as paths or trails in conjunction with the Kennewick Irrigation District should also be considered.

Sacagawea Heritage Trail

The Sacagawea Heritage Trail is a scenic river trek along the Columbia River through Kennewick, Richland, and Pasco. The trail is a 23-mile blacktop loop with portions on both sides of the Columbia River. The Sacagawea Heritage Trail plays on the vision for a continuous bicycle and pedestrian route connecting the Tri-Cities. The trail, showcasing interpretive opportunities, is intended to serve as an amenity for both local residents and visitors. The nonmotorized loop routes along the riverfronts in the Tri-Cities area and links with waterfront parks.

Figure 14: Sacagawea Heritage Trail Map

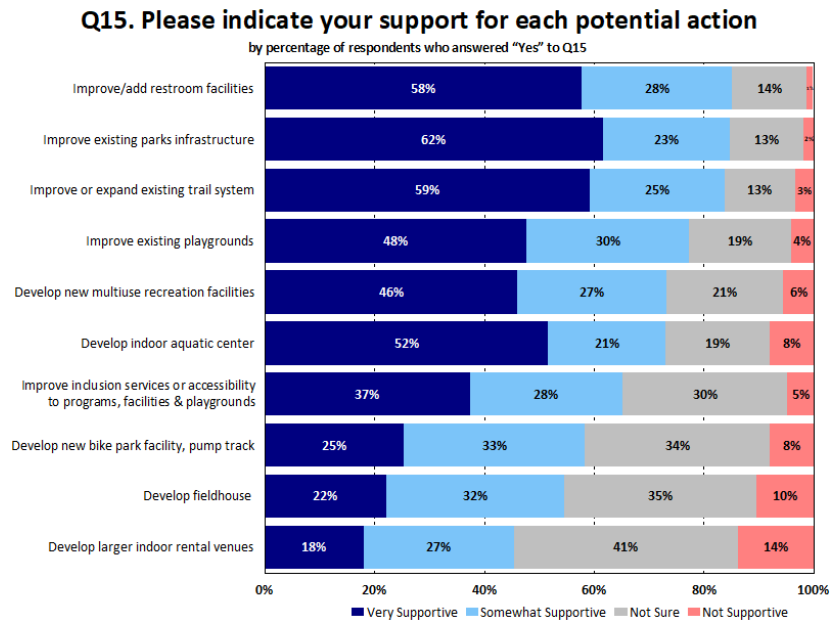


Indoor Facilities

Across the country, community centers are evolving from their original purpose as a community gathering place with facilitated programs into recreation centers that offer a host of fitness and active-life options, including pools, exercise and dance classes, weight rooms, personal trainers, and sports courts. A well-run facility serves as a thriving hub of activity for youth, adults, families, older adults, and civic organizations. KPR operates four indoor facilities; two operate as traditional community centers. The presence of sports courts at Numerica Pavilion meets the definition of a recreation center, but it is operated as a sports and event center.

Park Metrics finds 63% of reporting agencies offer an indoor facility that meets the definition of a recreation center. In 2022, peer parks and recreation agencies serving a population of 50,000 – 99,999 residents provided one recreation center per 38,000 residents. The community survey found 73% of Kennewick respondents to be very or somewhat supportive of developing a multiuse recreation facility.

Figure 15: Community Survey – Support for Multiuse Recreation Center

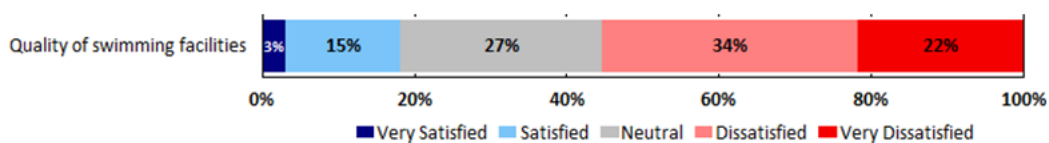


Aquatic Facilities

Opened in 1955, the Kenneth Serier Memorial Pool (KSMP) has served residents for nearly 70 years. With three separate swimming tanks, KSMP offers something for everyone. The main tank is a six-lane, 25-yard pool and varies in depth from four to six feet. The diving tank has a depth of 13 feet, has one diving board, and a climbing wall. The training tank starts at six inches and has a depth of three-and-a-half feet.

The last significant upgrade to KSMP occurred in 1987. KSMP has exceeded the average lifespan of an outdoor aquatic facility by 30 years. The community survey found 56% of respondents were dissatisfied or very dissatisfied with the quality of KPR swimming facilities.

Figure 16: Community Survey: Pool Satisfaction

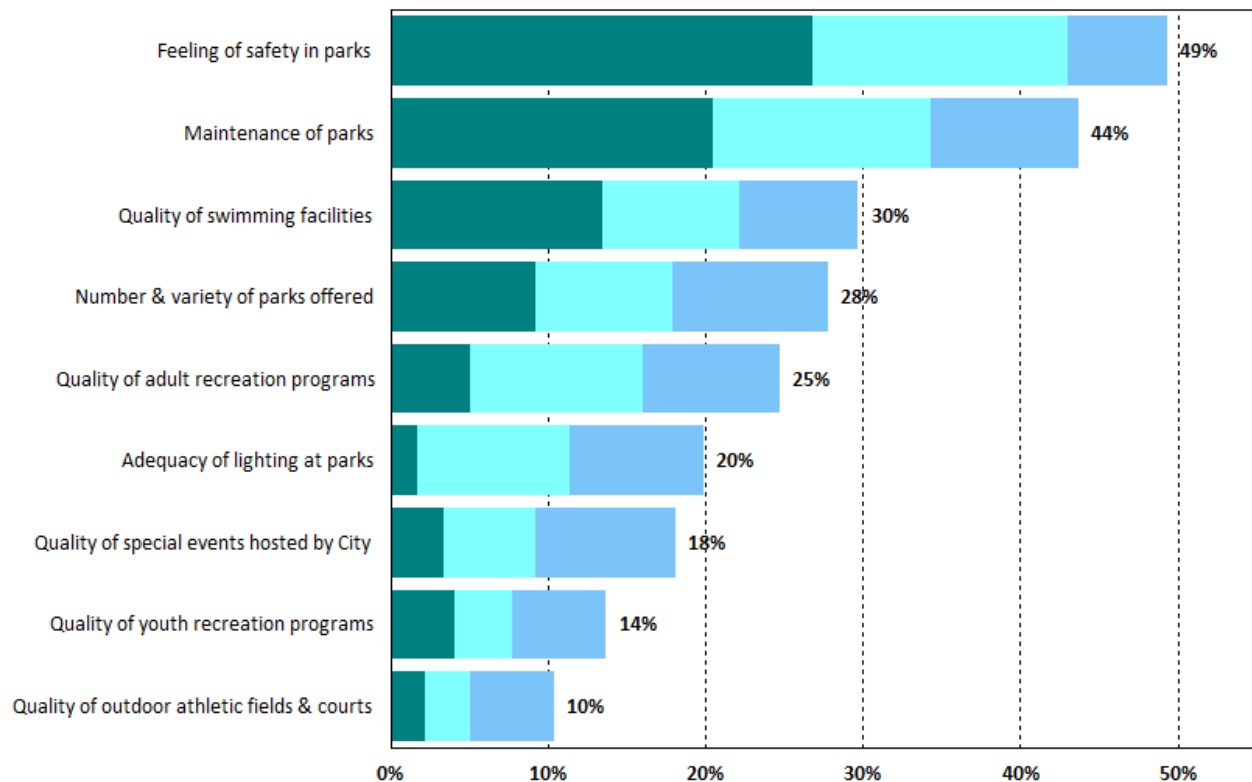


Respondents identified the quality of swimming pools as one of the top three areas they feel the most emphasis should be placed on (30%) over the next five years.

Figure 17: Community Survey – Emphasis Over the Next Five Years

Q4. Which THREE of the items from the list in Question 3 should receive the MOST EMPHASIS over the next five years?

by percentage of respondents who selected the items as one of their top three choices



JC Draggoo & Associates assessed sport facilities in the Kennewick area in 1995, summarizing results in a January 1996 report. The report was reviewed and updated in the Design Development Report, Economic Development Plan, and Asset Management Program for the Proposed Southridge Tournament Sports Fields Complex, dated September 13, 2004, by Public Enterprise Group (PEG). The Draggoo report highlighted the need to construct an indoor swimming pool.

The 2013 and 2018 Park and Recreation Comprehensive Plans each called for an additional outdoor and/or indoor swim facility. An indoor facility would reduce the existing outdoor facility demands by spreading lessons and classes over 12 months as opposed to 3 months.

Park Metrics finds 51% of reporting agencies offer an outdoor pool, and 28% have an indoor aquatics center. In 2022, peer parks and recreation agencies serving a population of 50,000 – 99,999 residents provided one outdoor pool per 43,100 residents and one indoor aquatic center per 64,150 residents.

4.3 Condition Audit



Each facility location and all on-site components have been assigned a GRASP® score. The resulting scores reflect the overall value of that site. A basic algorithm calculates scoring totals, accounting for components and modifiers for every park and facility in the inventory. Scores for each facility can be found in Table 8. Observations based on park and facility visits include the following:

- Kennewick has a variety of parks and components, but the system does not have a dog park.
- There is a need across the system for park and component updates; specifically, park signage, sport court surfacing, field fencing, curbing at playgrounds, and information kiosks. Many playgrounds and restrooms are also due for replacement.

Component Scoring

A component is any amenity—such as a playground, picnic shelter, basketball court, or athletic field—that allows people to exercise, socialize, and maintain healthy physical, mental, and social well-being. A list of GRASP® components and definitions can be found in Appendix A.

All components were scored based on condition, size, site capacity, and overall quality, reflecting the user's expectations of recreational features. Beyond the quality and functionality of components, GRASP® considers other essential aspects of a park or recreation site. Not all parks are created equal, and their surroundings may determine the quality of a user's experience. The GRASP® system acknowledges the differences to the user experience between identical playground structures in Figure 18.

Figure 18: GRASP® User Experience Differences



Overall, component scoring in Kennewick differs from the national GRASP® database relative to distribution of scores. **KPR components are 5% more likely to score 0 or 1 when compared to the national data set.**

Table 5: KPR Component Scores Versus National Data Set

KPR Neighborhood Scores		National Data Set Neighborhood Scores		KPR Community Scores		National Data Set Community Scores	
Scores	%	Scores	%	Scores	%	Scores	%
0	8%	0	3%	0	11%	0	3%
1	15%	1	10%	1	68%	1	10%
2	71%	2	79%	2	6%	2	78%
3	6%	3	8%	3	5%	3	9%

KPR Park Scoring

Park scoring measures how the parks and components serve residents and users. These scores often make the most sense when compared within the same classification (i.e., when comparing one neighborhood park to another). It may be reasonable that there is a wide range of scores within a category. Still, it may also be an opportunity to re-evaluate a park's particular classification based on the service to the community or neighborhood it serves.

Cumulative scores most directly reflect the number and quality of components. The availability of modifiers, such as restrooms, drinking fountains, seating, parking, and shade, also impact park scores. Higher scores reflect additional recreation opportunities than lower scores. There is no ultimate or perfect score. Each park has a GRASP® Neighborhood and Community Score. The biggest difference between these measurements is that the Neighborhood Score focuses on component diversity, while the Community Score also considers the quantity of each component. An example of this might be a park with several different components (e.g., playground, picnic shelter, basketball court and four tennis courts). The GRASP® Neighborhood Score would reflect that users have access to four different components, but the GRASP® Community Score not only recognizes the four unique component types but also factors in the four tennis courts. In this case, the park would score a higher GRASP® Community Score than a GRASP® Neighborhood Score.

There is no ultimate or perfect park score. Scores are cumulative and reflect the total number and quality of park components in addition to the availability of amenities, such as restrooms, drinking fountains, seating, parking, and shade. In general, parks with the highest scores offer more and better recreation opportunities than those with lower scores.

Park scores sorted by park classification are shown in Table 6. There is some variety in scores among park classifications. This may mean some adjustments to park classifications are needed to align services and public expectations.

Table 6: Park Scores

KPR	GRASP® Neighborhood Score	GRASP® Community Score	Total Components	Park Classification	Acres
Columbia Park	231	315	64	Regional	431
Southridge Sports Complex	60	103	17	Regional	55
Lawrence Scott Park	59	205	35	Community	28
Westgate Park	5	34	5	Community	5
Highlands Grange Park	78	86	16	Community	25
Eastgate Park	46	79	16	Community	15
Civic Center Athletic Area	34	58	10	Community	15
Keewaydin Park	31	34	7	Community	13
Sunset Park	44	52	10	Neighborhood	6
Hansen Park	38	38	7	Neighborhood	25
Canyon Lakes Park	34	34	7	Neighborhood	5
Inspiration Park	34	34	6	Neighborhood	5
Horse Heaven Hills Park	20	31	12	Neighborhood	5
Fruitland Park	24	26	6	Neighborhood	3
Underwood Park	24	24	5	Neighborhood	3
Hawthorne Park	18	24	6	Neighborhood	1.4
Monopoly Park	20	20	4	Neighborhood	1
Vancouver Park	15	19	5	Neighborhood	2
Hatfield Park	12	12	2	Neighborhood	3
John Day Park	12	12	2	Neighborhood	2
Jay Perry Park	14	10	3	Neighborhood	0.6
Layton Park	8	10	5	Neighborhood	3
Kenwood Park	9	9	7	Neighborhood	1.1
Columbia Center Estates Park	8	8	3	Neighborhood	2
Yelm Park	8	8	4	Neighborhood	3

KPR	GRASP® Neighborhood Score	GRASP® Community Score	Total Components	Park Classification	Acres
Vietnam Memorial	8	10	4	Special Use	1.1
Arboretum	4	4	1	Special Use	5
Zintel Canyon	31	31	6	Natural	34

Alternative Service Providers

Evaluators conducted a widespread effort to identify and evaluate alternative service providers of outdoor recreation facilities. Each facility was evaluated using the same scoring method. Components were located using aerial photography and confirmed during site visits. Facilities with restricted access were noted. Table 7 provides an alphabetical listing of facilities provided by alternative service providers located within or near Kennewick. Other service providers provide access to approximately 300 acres of parkland and 75 additional park components.

Table 7: Other Service Providers

KPR	GRASP® Neighborhood Score	GRASP® Community Score	Total Components	Park Classification	Acres
Claybell Community Park	53	101	20	Community	16
Apple Valley	9	2	3	HOA	4
Creekstone Community Park	34	5	7	HOA	4
Creekstone Community Park 2	22	5	5	HOA	3
Fountain Hills	7	2	2	HOA	2
Hansen Pocket Park	14	5	2	HOA	0.5
Ranchette Estates HOA 1	9	2	6	HOA	1.2
Ranchette Estates Rec Club	13	4	2	HOA	1.0
Volunteer Park at Canyon Lakes	24	5	4	HOA	2
Benton-Franklin Fairgrounds	5	29	5	Special Use	101
Bateman Island	73	101	13	Natural Area	161

KPR	GRASP® Neighborhood Score	GRASP® Community Score	Total Components	Park Classification	Acres
Vista Tot Lot	7	7	2	Neighborhood	0.3
Benton PUD Park	14	14	2	Neighborhood	1.3
Meadows East Park	6	6	2	Neighborhood	3
Penn Park	7	7	3	Neighborhood	0.8

Table 8 provides a component summary of schools within or near Kennewick. Limited access hours at schools result in a lower LOS. To account for this restricted availability, schools are assessed at a discounted rate in the LOS analysis.

Table 8: School Component Summary

Location	Playground	Open Turf	Multiuise Court	Basketball	Rectangular Fields, All Sizes	Diamond, Practice	Diamond Ballfield	Tennis	Athletic Track
Amistad Elementary	2	1	2	4	1				
Amon Creek Elementary	2	1	2	2	3	1			
Canyon View Elementary	2	1	1	2	1	2			
Cascade Elementary	2	1	2	1	2	1			
Cottonwood Elementary	2	1	2	2	2	2			
Eastgate Elementary	2	1	1	2	2	1			
Edison Elementary	3	1	2	4	4	1			
Fuerza Elementary	2	1	2	2	1	1			
Hawthorne Elementary	3	1	2	3	2	1			
Lincoln Elementary	2	1	2	2	1	1			
Sage Crest Elementary	2	1	1	2	3	1			
Southgate Elementary	2	1	2	2	4	1			
Sunset View Elementary	2	1	1	2	2				
Vista Elementary	2	1	1	1	1	1			
Washington Elementary	2	1	1	1	3	1			
Westgate Elementary	3	1	1	1	2	1			

Location	Playground	Open Turf	Multiuse Court	Basketball	Rectangular Fields, All Sizes	Diamond, Practice	Diamond Ballfield	Tennis	Athletic Track
Chinook Middle School		1		3	1		4		1
Desert Hills Middle School		1	1	3	3		4		1
Highlands Middle School		1	1	3	1		4		1
Horse Heaven Hills Middle		1	1	2	3		5		1
Park Middle School		1	1	2	2	4			1
Kamiakin High School		1			3	1	1	8	1
Kennewick High		1			2			8	1
Legacy High School		1		1					
Southridge High School		1		2	3	2	2	8	1
Total:	35	25	29	49	52	23	20	24	8

GRASP® Comparative Data

Using GRASP® scores enables comparison between KPR to systems across the country. The GRASP® National Data Set consists of 86 agencies, 5,584 parks, and more than 31,000 components. Table 9 provides additional comparative data from communities of similar populations across the United States. Because each community is unique, there are no standards or "correct" numbers, but the analysis offers interesting comparisons and insight into the Kennewick system versus other communities. For example, it might be concluded that Kennewick offers fewer parks than other agencies; however, it has higher-scoring, more developed parks. Fewer parks tend to limit walkable access.

Table 9: GRASP® Comparative Data

Agency	Willamalane, OR	Perris, CA	Kennewick, WA	Kirkland, WA	Meridian, ID	Average
Year	2022	2020	2023	2021	2022	
Population	70,337	79,137	86,170	92,165	124,790	90,520
Study Area Size	14,610	20285	39,694	11,678	23,191	21,892
Population Density (Per Acre)	4.8	3.9	2.2	7.9	5.4	5
Number of Sites	48	26	28	53	25	36

Agency	Willamalane, OR	Perris, CA	Kennewick, WA	Kirkland, WA	Meridian, ID	Average
Total Number of Components	249	151	325	261	256	248
Average Number of Components per Site	5.2	5.8	11.6	4.9	10.2	8
Total GRASP® Value (System)	1511	800	1610	1411	1694	1,405
GRASP® Index	21	10	19	15	14	16
Average Score per Facility	31	31	58	27	68	43
Percentage of Total Area With LOS >0	100%	68%	100%	100%	97%	93%
Average LOS per Acre Served	148	107	129	285	179	170
Components per Capita	4	2	4	3	2	3
Average Population Density per Acre	31	27	59	36	33	37
Percentage of Population With Walkable Target Access	22%	17%	26%	63%	68%	39%
People per Park	1,465	3,044	3,078	1,739	4,992	2,864
Park per 1,000 People	0.7	0.3	0.3	0.6	0.2	0.4

4.4 LOS

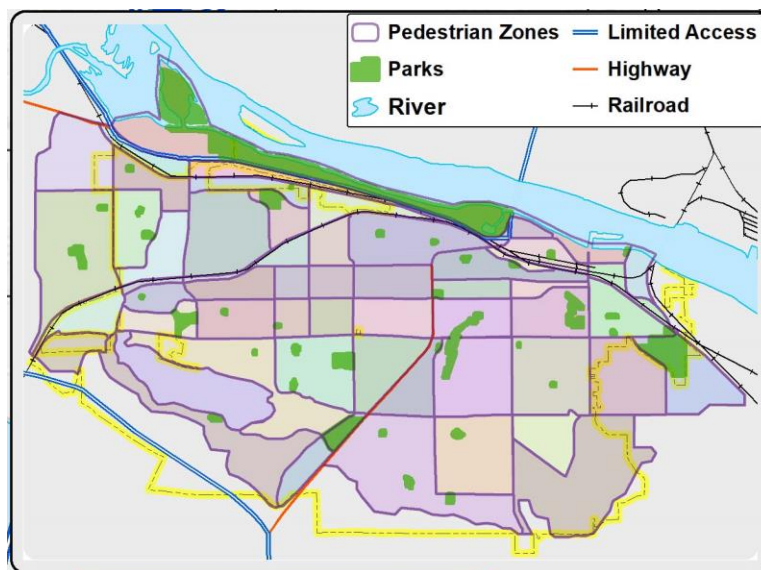
To analyze the LOS of KPR assets, the inventory team used GRASP® analysis. This process yields analytical maps and data that show access to recreation across a study area. This analysis also combines the inventory with GIS software to produce analytic maps and data that show the quality and distribution of park and recreation services across the City. The ability to show where the LOS is adequate or inadequate is an advantage of GIS analysis. This is done by defining a service area and using park scores to establish a reasonable number of components residents should have access to within the service area.

GRASP® scores suggest a reasonable LOS for Kennewick residents is four recreational components. The target value is comparable to a typical neighborhood park, which usually offers between three and seven components. For comparison, within KPR, access to Fruitland Park, Underwood Park, Hawthorne Park, Monopoly Park, or Vancouver Park would meet the target value. This target value may or may not be available at the same facility, and component makeups will vary. KPR has 275 components across its developed facilities. Colombia Park has the most with 64.

Walkability Analysis

Walkability analysis measures how conducive the built environment is to walking. Pedestrian barriers, such as highways, major streets, railroads, and natural features like rivers, impact walkable access. Map 2 denotes zones created by pedestrian barriers; these areas are accessible without crossing a major street or obstacle. Green parcels represent park properties. The yellow outline represents the City limit.

Map 2: Pedestrian Barriers



Map 3 represents the walkable LOS across Kennewick based on a 10-minute walk. Darker orange gradient areas indicate higher access to recreation components. Gray areas fall outside

of a 10-minute walk. The walkability analysis provides the distribution and equity of service across the community. The walkability analysis includes components provided by KPR and by schools and other service providers.

Map 3: Walkability Analysis

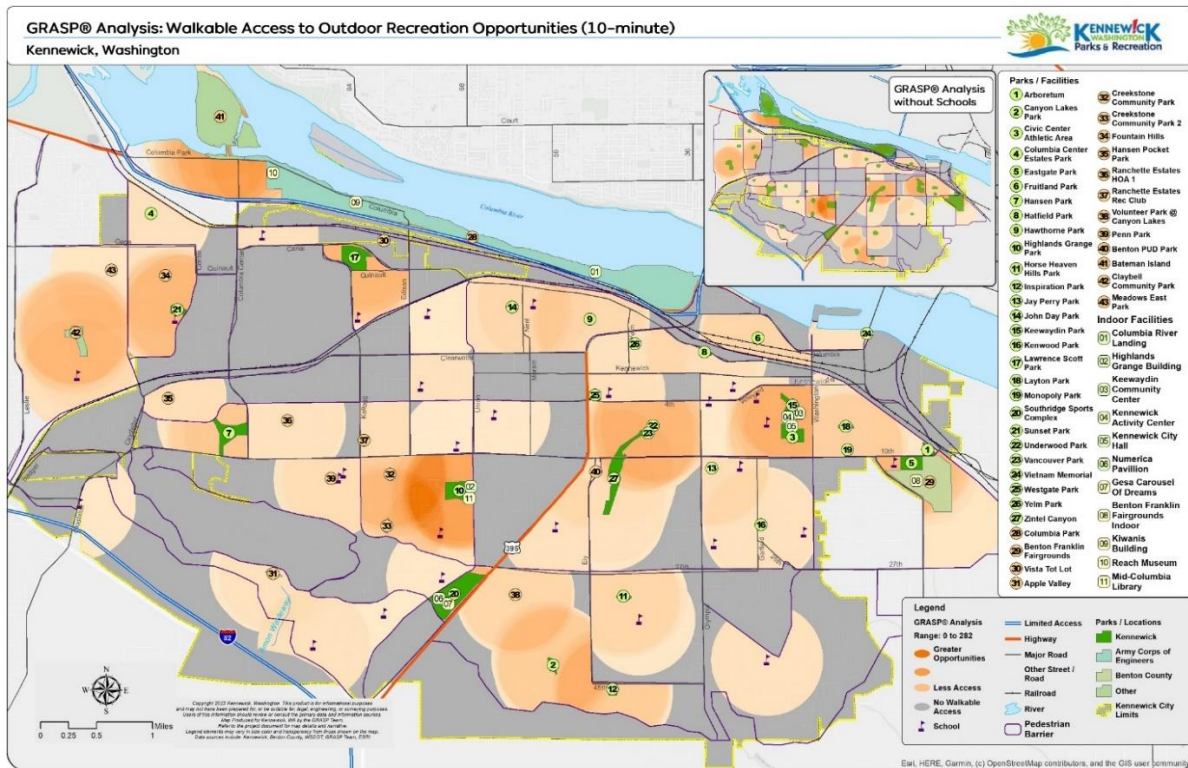


Figure 19: High-Value Walk Area

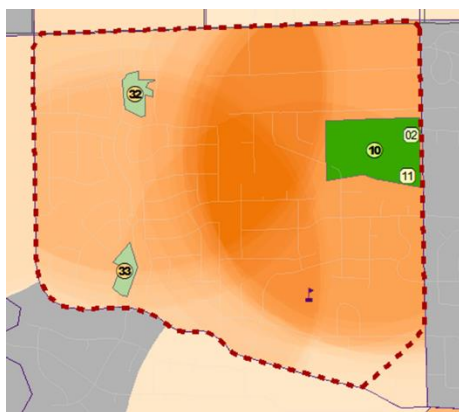
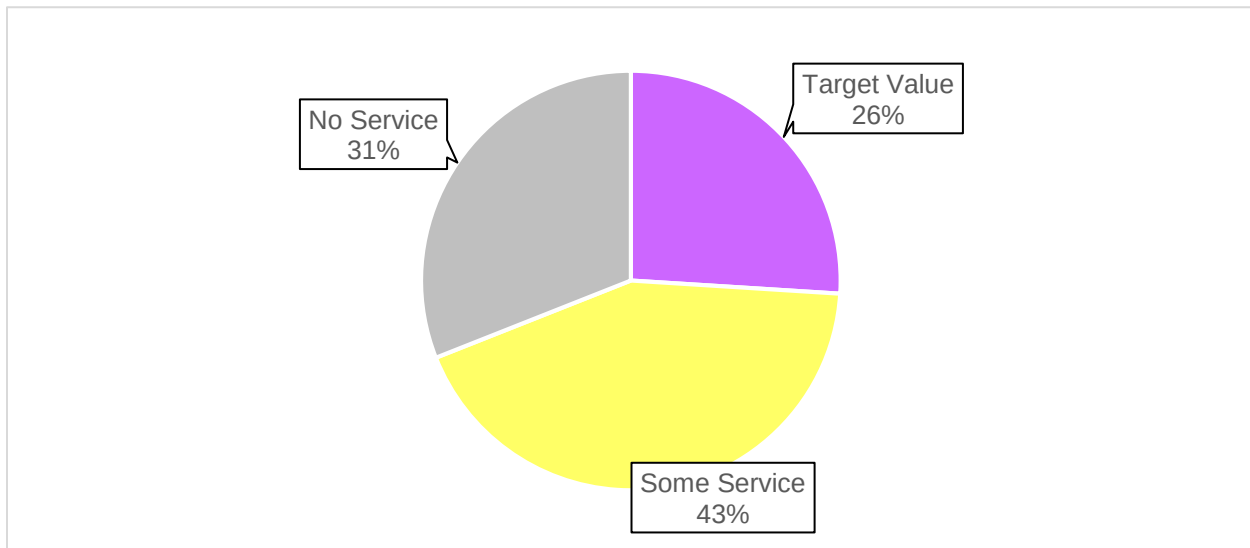


Figure 19 provides the highest service area in Kennewick. Within a 10-minute walk time, users can access 28 components between Highlands Grange Park and two HOA parks.

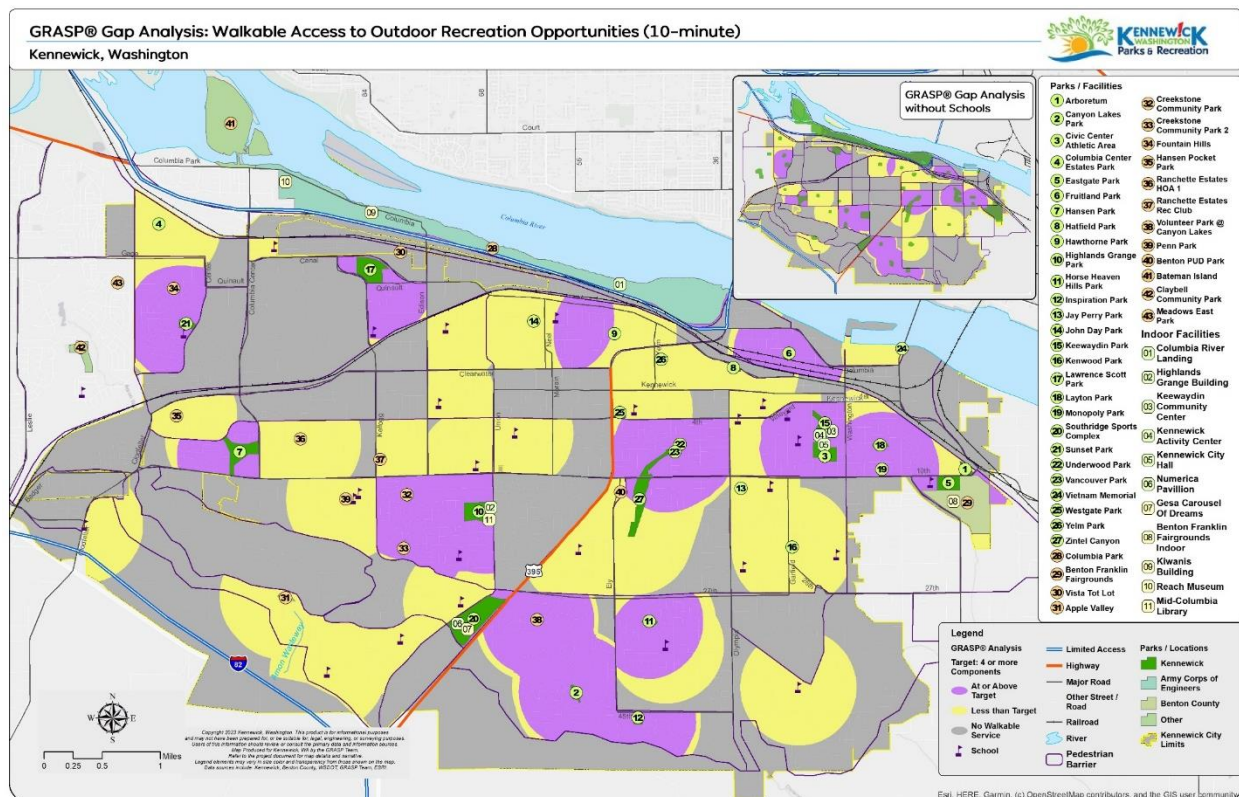
Analysis shows that more than two-thirds of Kennewick residents (69%) are within walking distance of outdoor recreation opportunities; 26% live within a target value service area. Figure 20 reflects the percentage of residents meeting the LOS target value based on where they live. Map 4 reflects access to the LOS target value. Purple indicates where LOS values meet or exceed the target value, while yellow areas provide access to limited recreation opportunities. Yellow areas offer some services but do not meet the target value of four components in a half-mile service area. Gray areas are currently not served within a half-mile service area.



Figure 20: Percentage of Residents Meeting LOS Target Value With Walkable Access



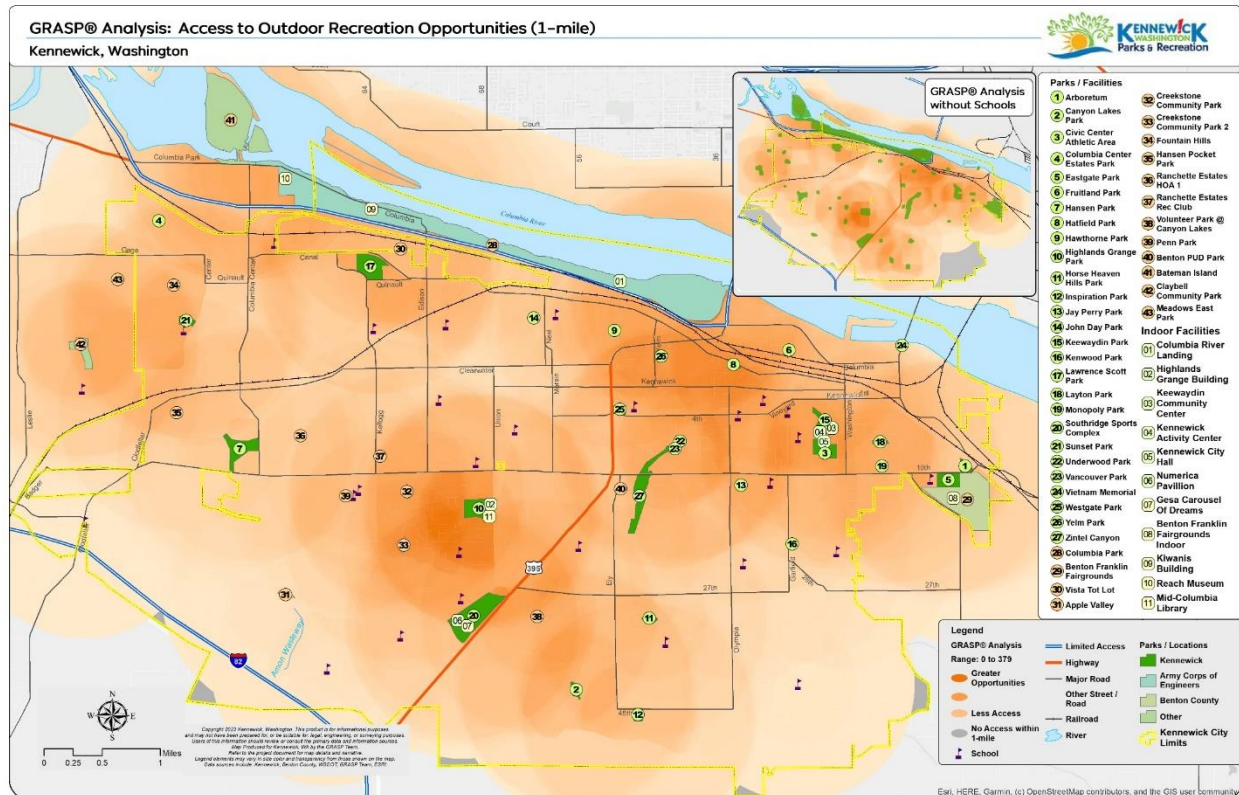
Map 4: Walkable Gap Analysis



One-Mile Gap Analysis

Based on walkability analysis, a one-mile service area for KPR is recommended. Map 5 provides the volume of recreation opportunities based on a one-mile service area. Darker gradient areas indicate a higher volume of opportunities. In general, KPR has effective distribution of parks and facilities in terms of one-mile access.

Map 5: One-Mile Access to Outdoor Recreation



Nearly all Kennewick residents have access to active or passive recreation opportunities within a one-mile service area. Gap analysis, however, shows that 93% of residents live within an area that meets the LOS target value of four components. Figure 21 reflects the percentage of residents meeting the LOS target value based on where they live. Map 6 reflects access to the LOS target value. Purple indicates where LOS values meet or exceed the target value, while yellow areas provide access to limited recreation opportunities. Yellow areas offer some services but do not meet the target value of four components in a three-mile service area. Gray areas are currently not served within a three-mile service area.

Map 6: One-Mile Gap Analysis

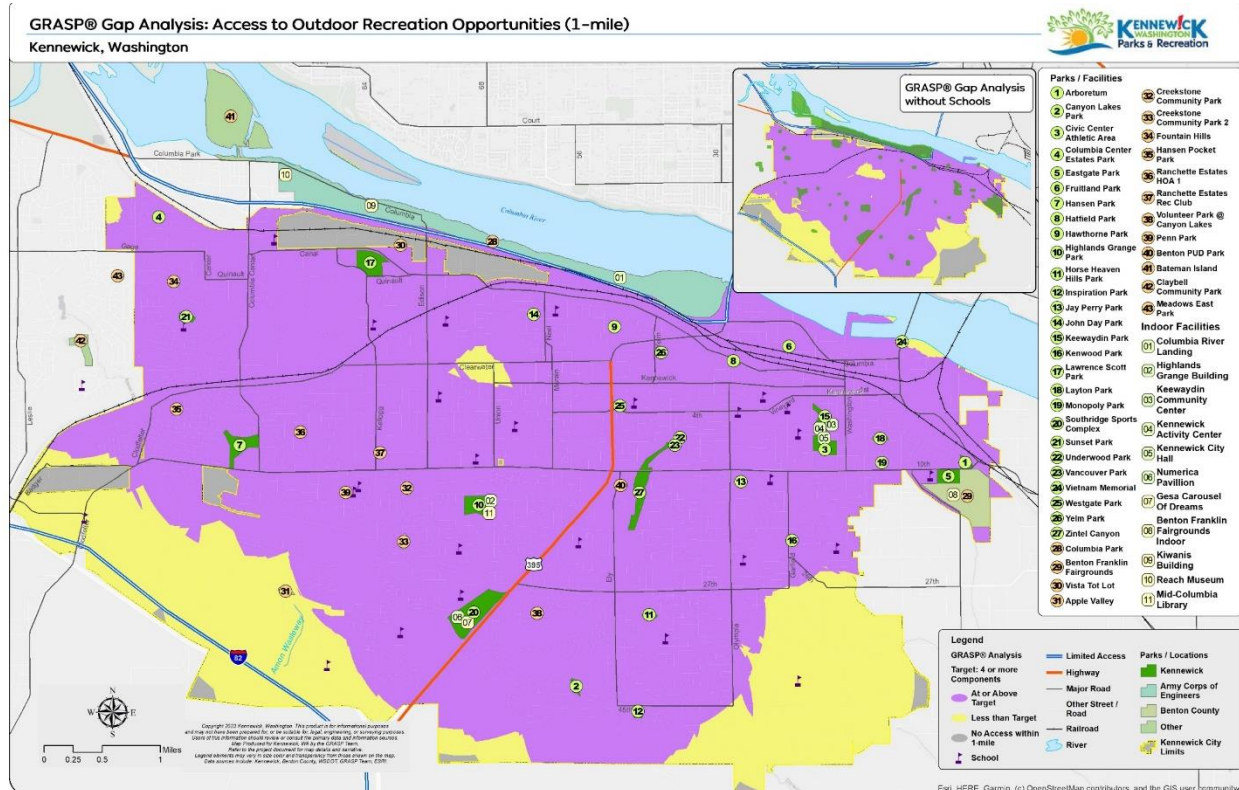
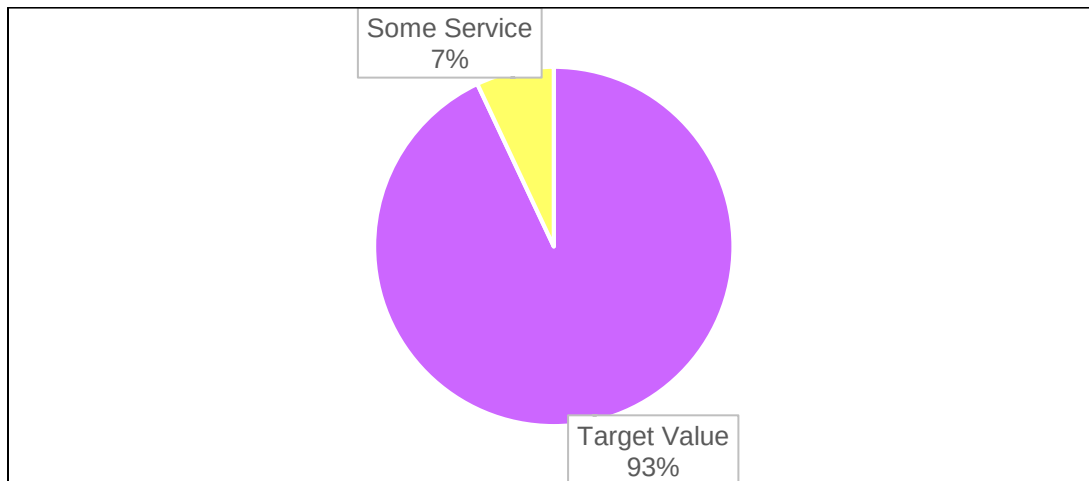


Figure 21: One-Mile Gap Analysis



Park Metric Analysis

The park metric analysis compares KPR to recent NRPA national statistics from its 2023 Agency Performance Review. KPR is below the NRPA median for park acres per capita, with 8.1 acres per 1,000 residents, versus the NRPA median of 11.2 acres. In 1993, the City adopted a ratio of 3 acres of park land to 1,000 population. Total open space goals were established at 20 acres per 1,000 population for a citywide average. The City of Kennewick 2017

Comprehensive Plan reiterated this overall goal in calling for 3 acres of park land per 1,000 residents. The 2019 Parks and Recreation Comprehensive Plan utilized a standard of 8 acres per 1,000 population for community parks and 2 acres per 1,000 residents for neighborhood parks.

Considering population increases, the analysis finds the need for 24 additional developed acres of parkland in the next five years to maintain the current LOS of 8.1 acres per 1,000 residents.

When comparing specific components to the NRPA Park Metrics, KPR meets the median in most categories. Tennis courts, basketball courts, dog parks, and multipurpose synthetic fields are the exceptions. Park Metrics are not intended to represent any standards against which each park and recreation agency should measure itself. There is not one single set of standards for parks and recreation because different agencies serve different communities with unique needs, desires, and challenges. Table 10 provides a NRPA park metric comparison, but the community survey findings shown in Figure 22 provide greater understanding of the importance of amenities to KPR residents.

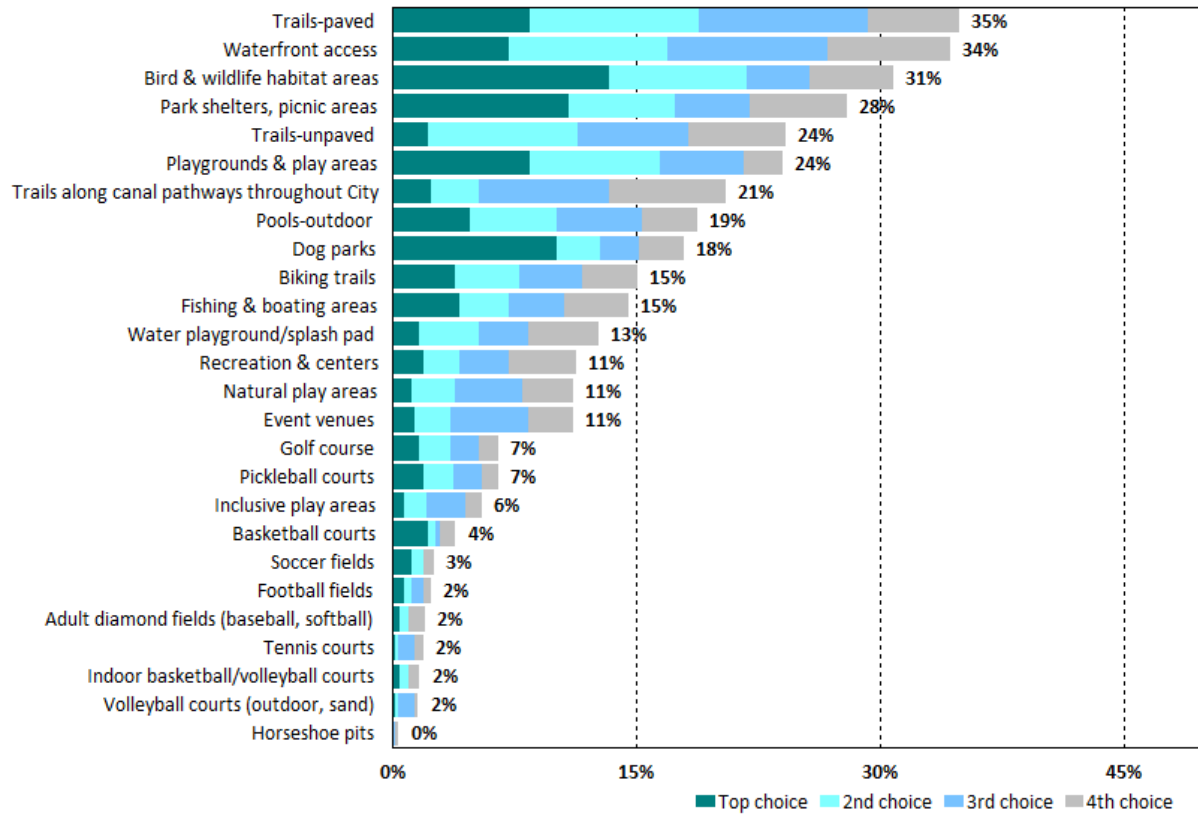
Table 10: Park Metric Analysis

Outdoor Facility	Agencies Offering This Facility	Median Number of Residents per Facility	KPR Current Quantity*	KPR Residents per Facility	Need to Add to Meet NRPA Median
Playgrounds	95%	3,779	23	3,747	0
Basketball Courts	86%	8,790	7	12,310	3
Tennis Courts	76%	5,577	8	10,771	7
Pickleball Courts	31%	11,150	17	5,069	(9)
Diamond Fields: Multipurpose	79%	7,237	21	4,103	(9)
Rectangular Fields: Multipurpose	69%	13,244	13		(6)
Multipurpose Synthetic Field	25%	43,1000	0	N/A	1
Dog Parks	68%	54,119	0	N/A	1
Swimming Pool	51%	43,100	1	86,201	1
Skate Parks	41%	52,906	2	43,085	0
Community Gardens	52%	62,927	2	43,055	(1)

Figure 22: Survey Findings – Facility Importance

Q10. Facilities Most Important to Households

by percentage of respondents who selected the items as one of their top four choices



Chapter Five: Maintenance Assessment

High-performing maintenance operations help ensure quality experiences through well-managed spaces and places. The work that is completed routinely—daily, weekly, monthly, or annually—often defines the quality of a park system.

Maintenance not only determines the outward appearance and supports the daily use of parks, but it also contributes to the longevity of facilities, the ability of plant materials to successfully mature, and consistent user experiences.



5.1 Introduction

Strategic, regular maintenance helps ensure the ongoing quality and longevity of the park. The ability to provide successful maintenance is positively supported by well-designed facilities, the use of high-quality materials, established maintenance practices, an adequately funded capital project renovation and replacement program, and trained, dedicated, professional maintenance staff.

Professional maintenance practices are a key factor in the long-term success of KPR goals for maintaining premiere parks for customer satisfaction in recreation programs and general drop-in use of parks and trails. In addition, maintenance and operations practices fulfill goals related to resource protection through tree and landscape planting and maintenance and invasive weed removal.

BerryDunn assessed the maintenance and operations resources and practices of KPR to increase efficiency and effectiveness. This assessment identifies best practices and recommendations for the future.

5.2 Financial and Staff Resources

The per-acre spending analysis shown in Chapter Two finds the investment less than peer agencies. In 2023, KPR is projected to spend \$4,026 per acre. Analysis suggests this is 26% less than peer agencies. To bring the KPR in line with peer agencies, an additional annual investment of \$982,734 is recommended. Table 4 provides per-acre spending comparisons. As new parks are developed, additional resources for park maintenance will be needed. Operations and maintenance estimates for new parkland should be calculated at \$5,434 per acre.

Several key organizational and operational aspects within the Parks and Facilities Services division require improvement, including:

High Span of Control: The Parks and Facilities Service Manager currently oversees a substantial number of staff—both full-time and seasonal. This can be an organizational challenge, as a high span of control may limit the manager's ability to provide sufficient supervision and support to each team member.

Roles of Crew Leader: The Parks and Facilities Crew Leader is actively involved in scheduling work assignments, assigning overtime, and addressing low-level disciplinary matters. While these responsibilities are essential for efficient operations, they do not significantly reduce the span of control, as Crew Leaders are also represented employees. The addition of three Crew Leaders is recommended, each specializing in specific areas such as events, Columbia Park, and/or general parks.

Focus Areas of Parks Crew Leader: The Parks Crew Leader's role encompasses a wide range of responsibilities, including parks, events, and Columbia Park. This diverse set of responsibilities may require a more proactive approach to help ensure effective management, especially given the overlap between Parks and Facilities teams.

Overtime and Employee Well-being: The significant amount of scheduled overtime, while embraced by some employees, raises concerns about potential burnout and reduced productivity during extended work periods. It is important to strike a balance between meeting operational demands and maintaining the well-being of staff.

Capital Projects Management: Additional funds have been allocated to capital projects for addressing deferred maintenance. To effectively manage these projects, there's a recognized need for a Projects Supervisor to assist with project management. This investment is seen as crucial for successful project execution.

Challenges in Facility Management: Managing 406,000 square feet of facilities with only three dedicated FTEs poses operational challenges. This includes responsibilities such as winterizing restrooms, playground inspections, pool operations, and mechanical system, roof, and janitorial contract coordination. The overlapping responsibilities between facility management and parks requires attention. It is recommended to include two General Craftspersons to address these needs effectively.

These points collectively underscore the importance of improving organizational structures, resource allocation, and employee well-being to help ensure effective park and facilities management. Balancing workload, addressing deferred maintenance, and improving project management processes are key areas for consideration and improvement. The FTE analysis in Chapter Two suggest Park and Facility Services is operating with a **6.5 FTE shortfall**.

5.3 Maintenance and Operations Observations

Maintenance refers to actions performed to help ensure components continue to function at expected levels of efficiency and effectiveness. Operations refers to decisions that help ensure systems achieve desired levels of efficiency and effectiveness. In simplest terms, maintenance is doing, and operations is deciding what needs to be done.

Efficient and effective operations are critical to the success of an organization's mission. Among the major reasons are enhanced recreational experiences, increased economic efficiencies, reduced liability, and improved public image and environmental stewardship.

The objective of the maintenance and operations assessment is to provide guidance for staff involved in parks and grounds maintenance to manage in an efficient manner. Changes will be required within Park and Facility Services to increase efficiency and effectiveness. The following are observations that need to be addressed:

- Maintenance and operations managements standards are in development but have not been adopted. KPR should adopt a maintenance and operation program and plan that is reviewed periodically for the management of all park and recreation areas and facilities. Each facility should be assigned an appropriate set of maintenance standards, including both recommended frequency and acceptable quality. Appendix B contains standard of care considerations (frequency), and Appendix C contains maintenance standards (quality) recommendations.

- A preventative maintenance plan is not in place. KPR should leverage the recently implemented maintenance management software to develop a comprehensive preventative maintenance plan to provide periodic, scheduled inspections, assessment, and repair, as well as replacement of infrastructure, systems, and assets.
- The existing signage for the parks system appears to be limited to signs for each park. No hierarchy or wayfinding signage exist for trails. KPR should develop a signage and wayfinding master plan.
- A park ranger program with service seven days a week could greatly assist with education in parks, homelessness, compliance issues (dogs on leash, inappropriate use of spaces, etc.) and the closing of parks.
- There is limited preventative maintenance. Staff has historically spent a significant amount of time reacting to park issues.
- KPR does not have standards for park features such as benches, pour-in-place playground surfacing, ramadas, signage, courts, and trash receptacles.

5.4 Standard of Care

All park assets (buildings, infrastructure, and amenities) are proactively managed to provide longevity. KPR maintains safe parks by routinely assessing conditions of and addressing needed maintenance or repairs to playground areas, hard surfaces, trees, sports fields, furniture, and park structures. Maintenance of the parks system is essential for KPR to:

- Be accountable to the community in preserving the value of its parks and recreation assets
- Help ensure the community's continued safe access to those amenities
- Provide proactive maintenance that helps prevent replacement or loss of park assets at a much higher cost and impact
- Maintain quality of life in the City

While no universal standard of care exists across park systems, it is common to organize maintenance practices in levels based on recognized criteria. The standards of care, as detailed in Appendix B, are based on a level (e.g., 1, 2, or 3) and mode (tasks and frequencies of each task) and follow NRPA best practices.

Level 1 (white): High-maintenance applications usually associated with high-use/high-participation elements that predominately provide upper gradient programs and services. Any element with a high safety risk exposure (i.e., play equipment, splash pads) are considered Level 1. Additionally, certain environmentally sensitive conservation/natural resource management areas are considered Level 1.

Level 2 (light blue): Moderate-level maintenance applications usually associated with reasonably moderate visitation that accommodates structured recreational gradient programs and services.

Level 3 (turquoise): Low-maintenance applications usually associated with low levels of visitation.

These guidelines are intended to provide a general framework for establishing sound and appropriate maintenance standards. To gain a better understanding of the standard of care, it's beneficial to compare the current maintenance level for each task against established best practices. As shown in Table 11, the maintenance standard currently indicates that only a quarter of maintenance tasks are performed at Level 1.

Table 11: Maintenance Standards by Level

Level 1	24% of Tasks
Level 2	16% of Tasks
Level 3	63% of Tasks

To enhance maintenance standards, it is recommended that KPR increases park maintenance standards closer to Level 1. Currently, most tasks are carried out at very low frequency. For the overall health of the system, additional and more frequent maintenance is necessary. Appendix C provides general maintenance standard to serve as starting points for KPR to review and consider as a basic desired maintenance standard for all parks and recreational facilities. The following recommendations are provided to guide future resource allocation efforts.

- Implement regular GMAX testing and proper grooming of artificial fields to increase safety and longevity.
- Introduce overseeding and regular fertilization to parks with increased aeration for soil health.
- Enhance the appearance and health of landscape beds by increasing efforts in shrub trimming, edging, and mulch application.
- Double the standards for aeration, overseeding, fertilization, and weed control for better sports field turf quality.
- Establish routine inspections and power washing for sport courts to ensure safety and longevity.

Chapter Six: Recreation Assessment

BerryDunn conducted an assessment of KPR's recreational and program service offerings through three separate analyses: program life cycle, age segmentation, and program performance. This assessment also included a review of services provided by benchmark agencies and a comprehensive review of other alternative service providers. The insights gathered from these analyses will be instrumental in identifying opportunities for shaping KPR's future program direction.



6.1 Introduction

To begin the Recreation Program Assessment, a focus group session was held with four programming staff to discuss system strengths, weaknesses, and opportunities and to review the core program areas offered by KPR.

Strengths

- Following the Covid-19 pandemic, most recreation programs have returned to pre-pandemic levels.
- Staff members are quick to make changes when programs are not successful and eliminate them from the program menu.
- Specific program types have gained significant attendance and community respect:
 - Summer swim lessons consistently reach capacity, with limited room for additional sessions during the summer season.
 - The youth softball program is experiencing growth and typically operates at full capacity.
 - Senior fitness classes enjoy high popularity and attendance.
 - A drop-in art class for seniors attracts between 10 and 15 participants per session.
 - A newly introduced event, "America Family Fun Day," provided by the Department, exceeded expectations by attracting nearly 1,000 attendees in its first year, far surpassing the initial goal of 200.
- KPR provides space to external organizations for events, with approximately 90% of public events organized by outside groups. Some organizations, like the softball association, have been utilizing these spaces successfully for over two decades.
- The support received from City marketing, accounting, and information technology departments is strong and greatly appreciated by KPR.

Weaknesses

- Staff has identified a need for additional indoor programming space to meet the community's growing demand. This demand encompasses rentals and the introduction of new programs, aligning with the findings from the community survey. These programs include arts and culture, fitness and wellness, hobbies, and life skills, as well as new senior programs.
- A significant weakness highlighted is the shortage of personnel, both full-time and part-time, required to ensure the effective operation of KPR. The shortage occasionally impacts the quality of customer service, particularly when part-time staff handle registration and phone inquiries.
- Communication challenges have surfaced with certain part-time staff groups, mainly due to the lack of overlap with full-time staff schedules. The reliance on evening part-time

staff necessitates additional training, as they are expected to have comprehensive knowledge about KPR operations.

- Participation in several senior drop-in programs has shown a recent decline. While historically attracting up to 20 attendees at each session, activities such as cards and board games now draw fewer than 8 participants. Additionally, low attendance led to the discontinuation of Bingo.

Opportunities

- There is an opportunity to create a Memorandum of Understanding (MOU) with the local school district. This MOU would confirm the roles and responsibilities of each and make it easier for KPR to utilize indoor school space to help meet the recreation programming needs of residents.
- Currently, KPR contracts the operation of many programs to outside vendors. These vendors collect all the program data and registration fees from participants. In some instances (Jiu Jitsu for example), it is difficult to determine where payment should be made (KPR or the contractor).
- New program spaces – via new partners, construction, renovation, or rental – would allow Department staff to provide new programs that are not currently offered. Some of these have already been noted regarding the survey results, others include:
 - Esports
 - Dance for youth and adults
 - Music – voice and instrument instruction
 - Programs for children that are homeschooled
 - Do It Yourself (DIY) programs for adults such as gardening, home repair, etc.
 - Family and senior trips

For better control of the registration data and revenue, KPR might consider taking the registration for all KPR programs offered and pay the contracted vendors according to the terms of their agreement. The standard contractual agreement in parks and recreation is between 60/40 and 70/30 with the higher percentage being paid to the agency providing the program space – which includes the space, utilities, building staffing, and registration.

6.2 Core Program Areas

Following the focus group with staff and a review of the data, the BerryDunn team determined that KPR's core programs include:

- Adult programs
- Aquatics
- Camps
- Events

- Seniors
- Youth Sports

Nearly all the camp programs and the adult programs are sports related. **KPR programming outside of sports is extremely limited.**

Adult Programs

For adults over the age of 18, KPR offers spring and fall co-ed softball leagues, Jiu Jitsu, summer lap swim, fencing, and parent-child swim lessons.

Aquatics

During the summer months, a multitude of swim lessons are offered at the Kenneth E. Serier Memorial Pool. The aquatics program strives to provide a safe, fun, and creative experience to patrons of all ages. On average, the Department provides swim lessons to more than 2,500 registered participants annually through over 200 opportunities. There are parent-child options for those 6 months to 3 years followed by Polywogs for ages 4 to 6 years, and then five levels of swimming for youth. KPR provides opportunities for private lessons and adaptive swim lessons for those with disabilities. A swim team for ages 6 to 17 years is also offered. The pool operates from Memorial Day to Labor Day. After the Labor Day closure, the Kennewick High School swim team utilizes the pool for training and hosts approximately four swim meets each year.

Camps

A number of sports camps are offered for you during the summer. These include:

- Tennis camp for 5 – 12-year-olds
- M.A.D. Inspiration Camp for children in grades 4 through 6 and 7 through 10
- Themed dance camps for ages 4 – 8 years
- Sports camps for ages 6 – 12 years

Events

KPR provides many large events throughout the year for people of all ages. These include:

- Vintage at the Ridge
- Family Fun Day
- Harvest Bazaar
- National Night Out*
- Columbia Cup*
- River of Fire*
- Kids Fishing Day*

Three of these annual events (*) KPR partners with other agencies to provide but the Department plays a lead role in all.

Seniors

Most of the KPR senior programs are drop-in opportunities where participants are charged \$1 to attend including:

- Bunco
- Creative Palette Art
- Bridge
- Dominos
- Pinochle
- Chinese Mah-Jongg
- Sewing
- Woodcarving
- Billiards (\$20/month or \$2/day)

In addition, there is a senior swim during the summer and two fitness classes that attract a senior population including Life Done Right and Momentum Fitness.

Youth Sports

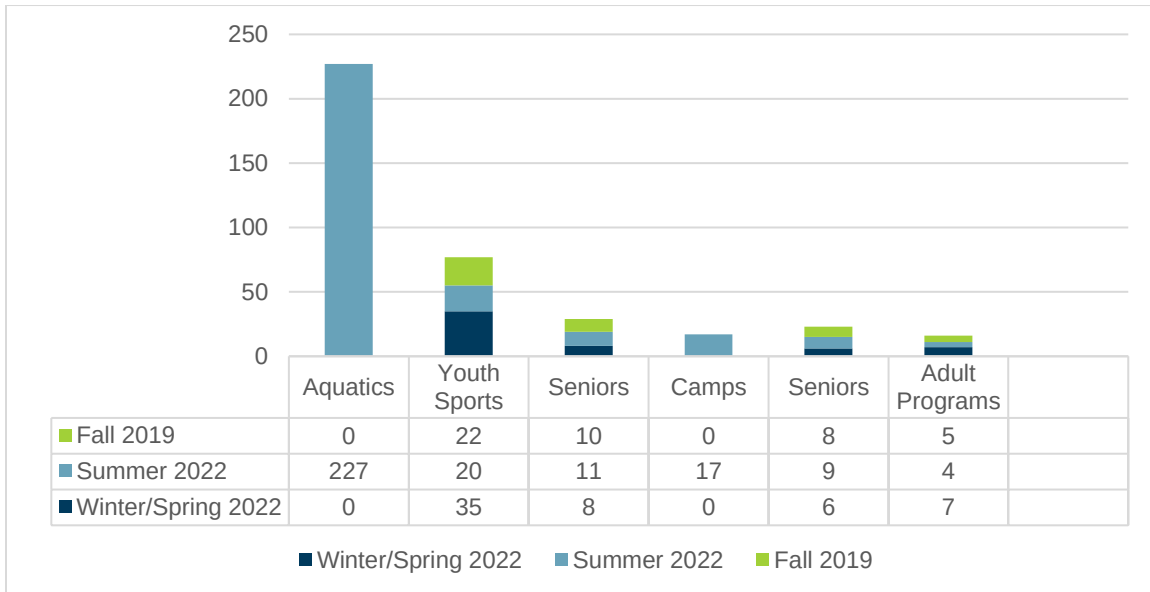
The largest number of programs that KPR offers annually to residents are youth sports. There are a wide variety of offerings for children as young as 2 through 17 years of age. These programs are offered all year round, often by contracted services. These sports programs include:

- Basketball instruction and leagues (ages 2 – 12 years)
- Baseball (ages 3 – 5 years)
- Co-ed T-Ball (ages 5 and 6 years)
- Co-ed Coach Pitch baseball/softball (ages 7 and 8 years)
- Co-ed Machine Fastpitch softball (ages 9 – 11 years)
- Soccer (ages 2 – 12 years)
- Fencing (ages 12 and up)
- Siri Brazilian Jiu Jitsu (ages 4 – 13 years)
- Volleyball (ages 5 – 12 years)
- Flag Football (ages 5 – 12 years)
- Tennis (ages 5 – 12 years)
- Football Tots (ages 3 – 5 years)

6.3 Program Distribution

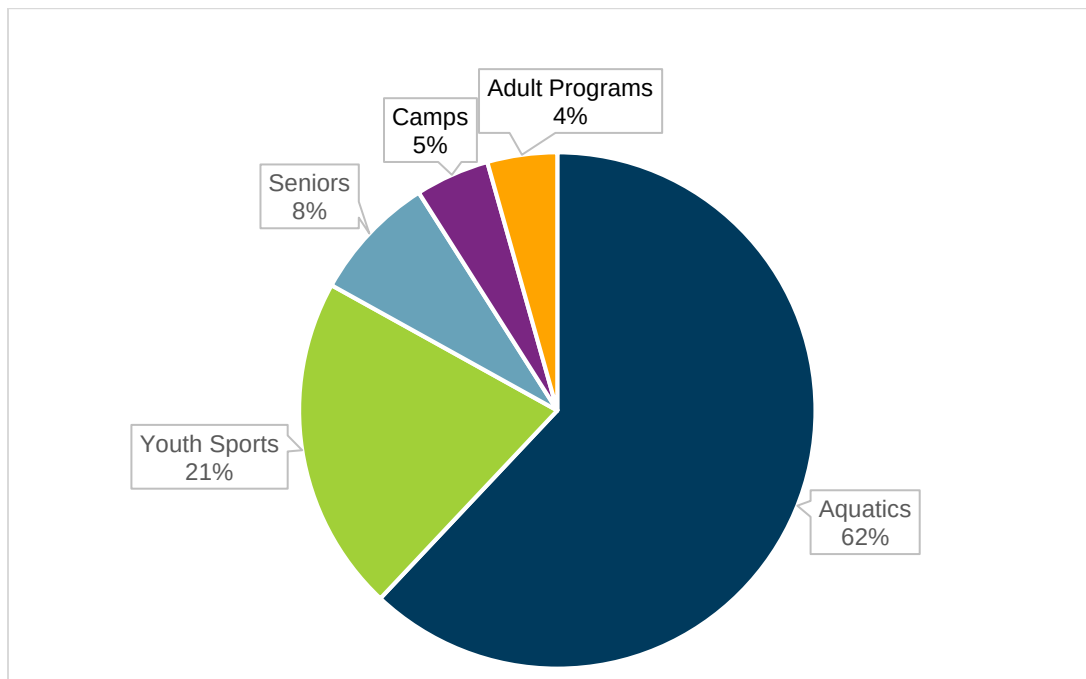
Understanding how KPR's program menu is distributed across the core program areas helps to identify the extent of programming within each area in relation to the whole. Figure 23 depicts the total of programs offered in 2022 according to program area and season.

Figure 23: 2022 Programs by Core Program Category and Season



Aquatics was the largest quantity of programs (227), regardless of season. Youth sports was the second-largest quantity of programs (77). Conversely, the areas with the lowest quantity of programming were camps (17) and adult programs (16). The distribution of the core program areas in relation to each other is depicted in Figure 24.

Figure 24: 2022 Program Distribution



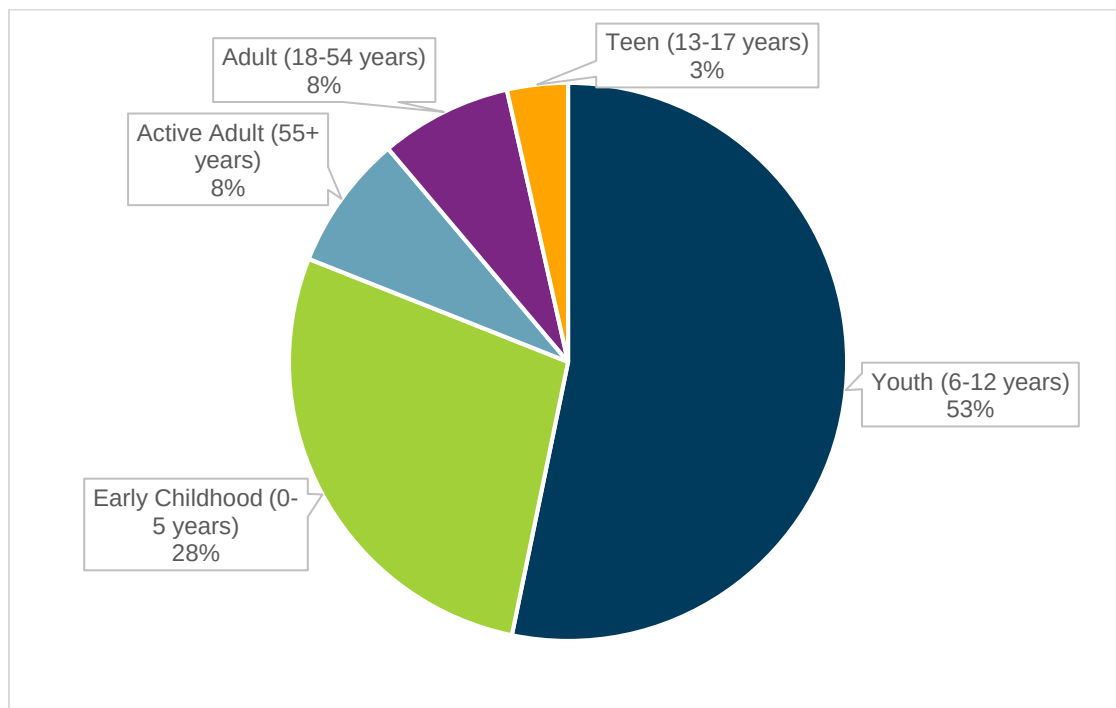
6.4 Age Segmentation

The age segment analysis reviews the distribution of program offerings according to the age segments serviced. For the purposes of this assessment, BerryDunn delineated age categories according to the following age structure:

- Early Childhood, ages 0 – 5 years
- Youth, ages 6 – 12 years
- Teens, ages, 13 – 18 years
- Adults, ages 18 – 54 years
- Seniors, ages 55+ years

BerryDunn tallied the number of program opportunities (both registration based and drop-in) geared toward particular age groups for the three seasons (winter/spring, summer, and fall). If a program spanned clearly across two age categories (e.g., ages 8 – 14 years), BerryDunn counted that section once in the youth category and once in the teen category. Figure 24 displays KPR's 2022 program menu's percentage of programs offered according to each age segment.

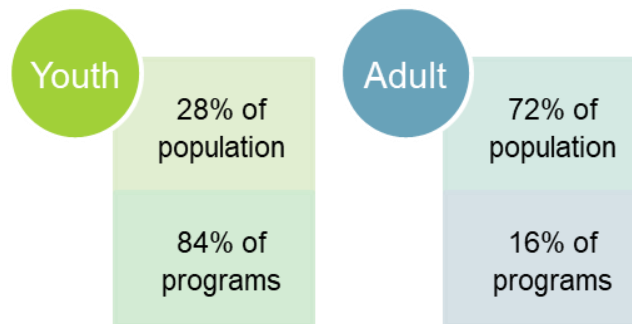
Figure 25: 2022 Age Segmentation of Programs



Of all the age-specific programming, 84% of the programs are designed for youth 18 years and younger while 16% are designed for adults 18 years of age and older.

The age segmentation analysis is a useful method to review recreation programming related to community demographics. Demographic data can be helpful to consider how programming efforts are aligned with the makeup of the community. The adjacent comparison of the community's population and program offerings in Figure 26 demonstrates two key age segments' relationship between the population percentage and the percentage of programs offered.

Figure 26: Population vs. Program Menu



Most (84%) of KPR's programs are designed for youth, while the youth age segment represents 28% of the population. Adults, over 18 years of age, make up 72% of the population while 16% of programming is designed for adults. The notion of offering a majority of programming for youth is consistent with most park and recreation agencies' program menus across the county; that said the percentage of youth is typical within the 60 to 70% range.

6.5 Program Life Cycle

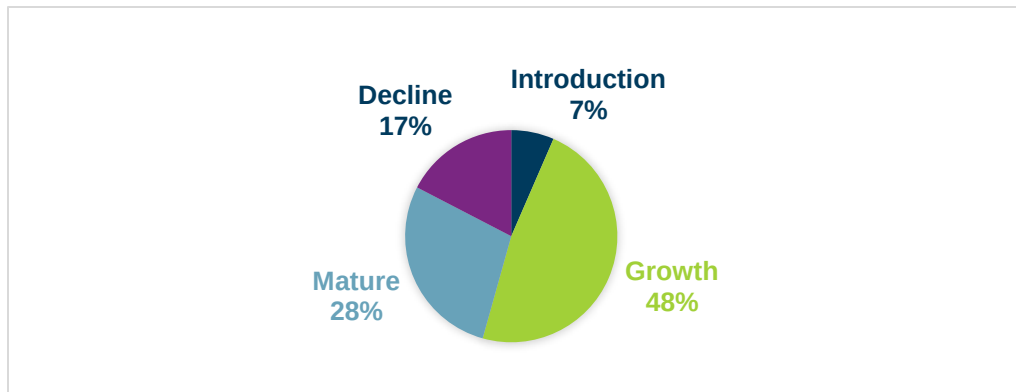
The recreation assessment included a life cycle analysis of programs core programs. This type of assessment helps to determine if Department staff need to develop new and more innovative programs, reposition programs that are in the decline state, or continue with the current balance of life cycle stages. BerryDunn based this assessment on staff members' opinions of how their core programs were categorized according to the four life cycle stages: introduction, growth, mature, and decline. Table 12 outlines the descriptions of those life cycle stages and KPR's percentage of programs within each stage.

Table 12: Life Cycle Stages

Life Cycle Stage	Description	KPR Percentage
Introduction	Getting the program off the ground, heavy marketing	7%
Growth	Moderate and interested customer base, high demand, not as intense marketing	48%
Mature	Steady and reliable performer, but increased competition	28%
Decline	Decreased registration	17%

Figure 27 depicts the percentage of programs in each life cycle stage. A healthy balance between the stages is optimal with the bulk of programs in the growth and mature stages.

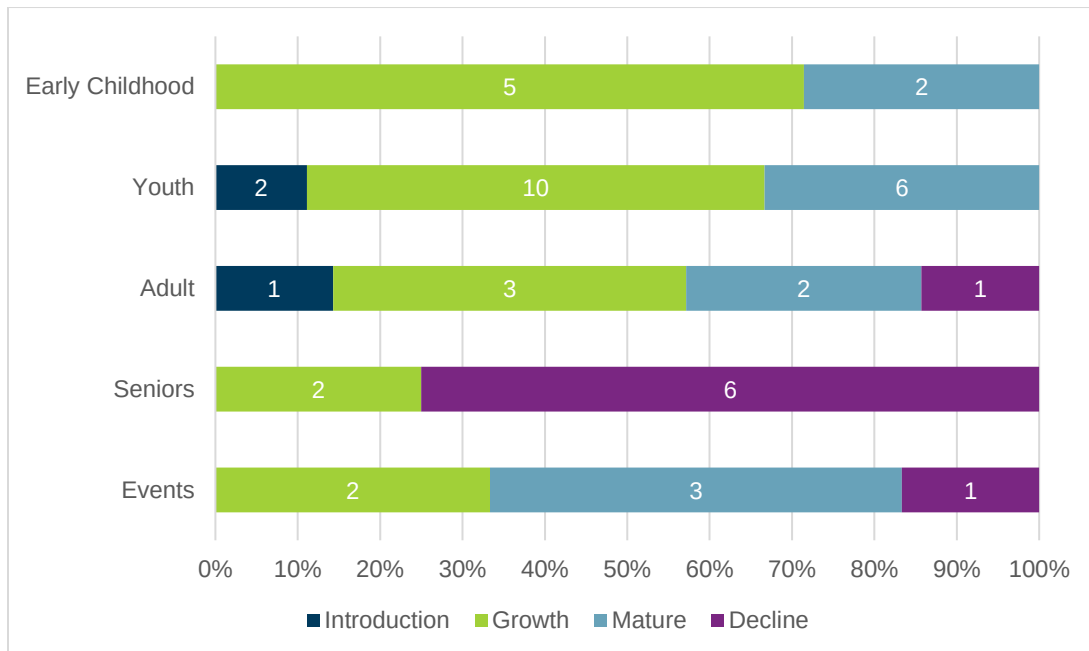
Figure 27: Life Cycle Stages



As a normal part of the planning cycle, there should always be programs in the introduction stage that bring new and innovative programming to the menu. There will typically also be programs in the decline stage; those programs that should either be repositioned or decommissioned. The percentage of KPR programs in the decline stage (17%) is somewhat high. To reduce this percentage, staff should identify programs to either reposition or decommission. Additionally, efforts to encourage the introduction of new programs, as well as to shift programs from growth into mature status, will create a more balanced menu.

Figure 28 provides a visual representation of age categories and their respective spread across life cycle stages.

Figure 28: Life Cycle Distribution of Programs



Programmers should strive to have programming for each age group that falls into all four life cycle stages, with the majority in the growth and mature stages. Only one age group, adults, has programs in all four categories. The creation of new programs for early childhood and seniors will begin to create a more balanced menu. For senior programming, it appears there is an opportunity to either reinvest or divest from a high number of programs in the decline stage.

6.6 Additional Metrics to Measure and Track

With solid data, there are other program performance measures that can be measured and tracked from season to season and year to year. Some of these metrics include:

- Program performance: total enrollment by program type and by season and revenue generated in each program area by program type and by season.
- Program cancellation rate: the difference between the number of courses offered and the number of courses held
- Resident Participation: the total number of residents and nonresidents served in each program area and by season and annually
- Participant reach: with all the registration data, a heat map can be created of all participants to visually depict where participants live who are in programs for a specific period of time (seasonally or annually).
- Wait list analysis: the total number of participants that cannot be accommodated during a specific season due to lack of space or instructors).

- Number of programs offered compared to the number of programs that ran successfully in each season

Because KPR does not take all the registration for programs, there is not currently enough information to evaluate and track these metrics. It is highly recommended that KPR begin the process of taking all the registration to have more control over the revenue, to know who is in programs (residents and nonresidents), and to be able to monitor a variety of program success factors.

6.7 Benchmarked Agencies Programs and Services

Recreation programs are core to the primary services that park and recreation agencies provide. The type of programs varies based off several factors, including facility space, staff/instructor availability and expertise, alternative service providers in the area, benefit to the community, and program demand.

Consistent to all agencies compared in this study is fitness classes, team sports, social recreation events, and individual sports. Kennewick was the only agency in the study that did not offer health and wellness education and safety training. Running and/or cycling races are also an opportunity that other agencies offer. Very few agencies in the study offer eSports/eGaming, cultural crafts, performing arts, and visual arts.

Table 13: Programming Offered by Parks and Recreation Agencies

Programs and Services	Kennewick	Auburn	Kirkland	Meridian	Pasco	Richland
Health and wellness education	○	●	●	●	●	●
Safety training	○	○	●	●	●	●
Fitness enhancement classes	●	●	●	●	●	●
Team sports	●	●	●	●	●	●
Individual sports	●	●	●	●	●	●
Running/cycling races	○	●	●	○	●	●
Racquet sports	●	●	●	●	○	●
Martial arts	●	●	●	●	○	○
Aquatics	●	○	●	●	●	●
Golf	●	●	●	●	○	●
Social recreation events	●	●	●	●	●	●
Cultural crafts	○	○	○	○	●	●
Performing arts	○	●	○	○	○	○
Visual arts	○	○	●	●	○	●
Natural and cultural history activities	○	○	●	●	●	●
Themed special events	●	○	●	○	●	●

Trips and tours	☐	☒	☒	☒	☐	☒
eSports/eGaming	☐	☐	☒	☐	☐	☐

Legend ☒ Yes ☐ No

Targeted Programs for Children, Seniors, and People with Disabilities

Among the key programs and services offered by park and recreation agencies nationwide are those that provide activities for youth, teens, seniors, and people with disabilities. These might be in the form of summer camps, before/after school programs, or STEM programs.

In the case of these benchmarked agencies, all agencies offer summer camps and senior programs. Many agencies offer accommodations for those with disabilities to participate in programs, but KPR was the only agency explicit about offering this type of inclusive programming.

Table 14: Targeted Programs for Children, Seniors, and People with Disabilities

Targeted Programs	Kennewick	Auburn	Kirkland	Meridian	Pasco	Richland
Summer camp	☒	☒	☒	☒	☒	☒
Before-school programs	☐	☐	☐	☐	☐	☐
After-school programs	☐	☐	☒	☐	☒	☐
Preschool	☐	☒	☒	☐	☐	☐
Full daycare	☐	☐	☐	☐	☐	☐
Specific teen programs	☐	☒	☒	☒	☒	☒
Specific senior programs	☒	☒	☒	☒	☒	☒
Programs for people with disabilities	☐	☐	☐	☐	☒	☐
STEM programs	☐	☒	☒	☐	☐	☒

Legend ☒ Yes ☐ No

6.8 Alternative Service Providers

An alternative service provider review, or gap analysis, is a process used to assess the availability of recreational services and facilities in a specific area. The goal is to help organizations make informed decisions about how to allocate resources and prioritize initiatives.

In August 2023, a comprehensive inventory of over 100 service providers in the Tri-Cities region was collected and organized into six categories that relate to programs and services provided by KPR:

- Aquatic Facilities (7)
- Fitness Centers and Gyms (41)
- Adult Sports Centers (2)
- Recreation Centers (6)
- Youth Enrichment (23)
- Youth Sports (16)

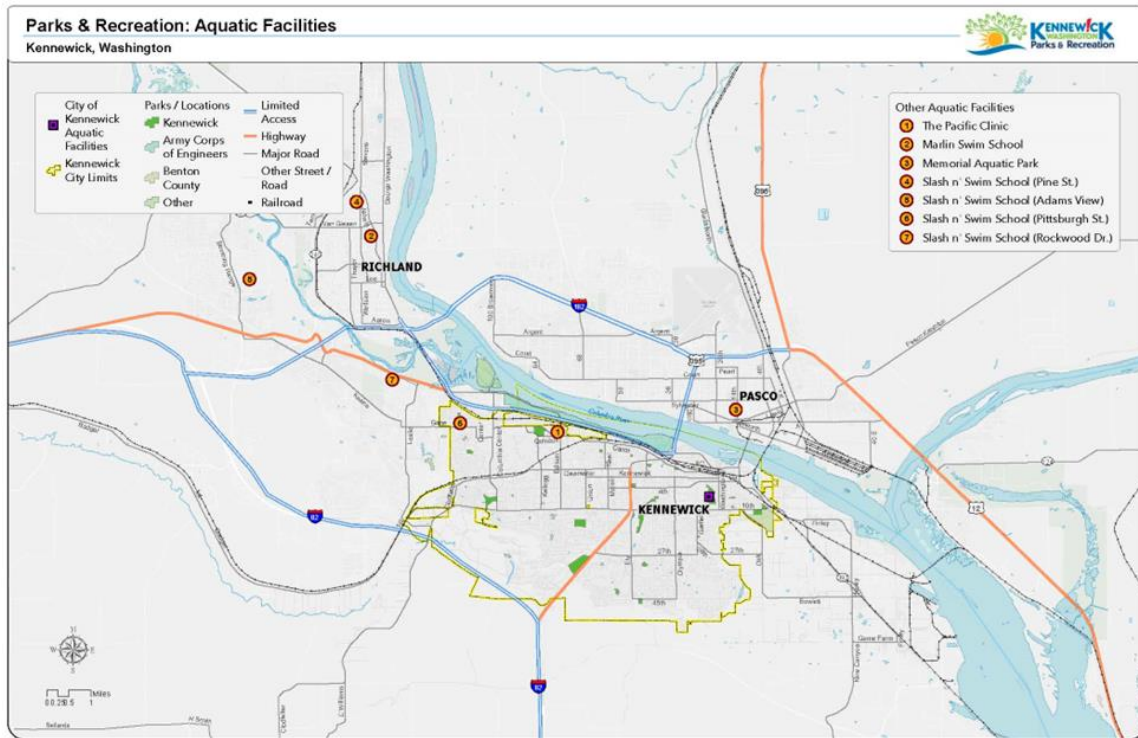
The inventory prepared for this study offers a snapshot in time. Service providers are continuously updating their offerings. The review seeks to capture 90% of alternative service providers at the time of the study.

After a thorough review of the Tri-Cities area, while numerous alternative service providers are present, the market does not appear oversaturated. In fact, specific gaps were identified, particularly in areas such as adult sports, aquatics, and youth sports. Additionally, there are few Recreation Centers available in the area. Out of the six facilities identified, only one offers comprehensive programming suitable for all age groups.

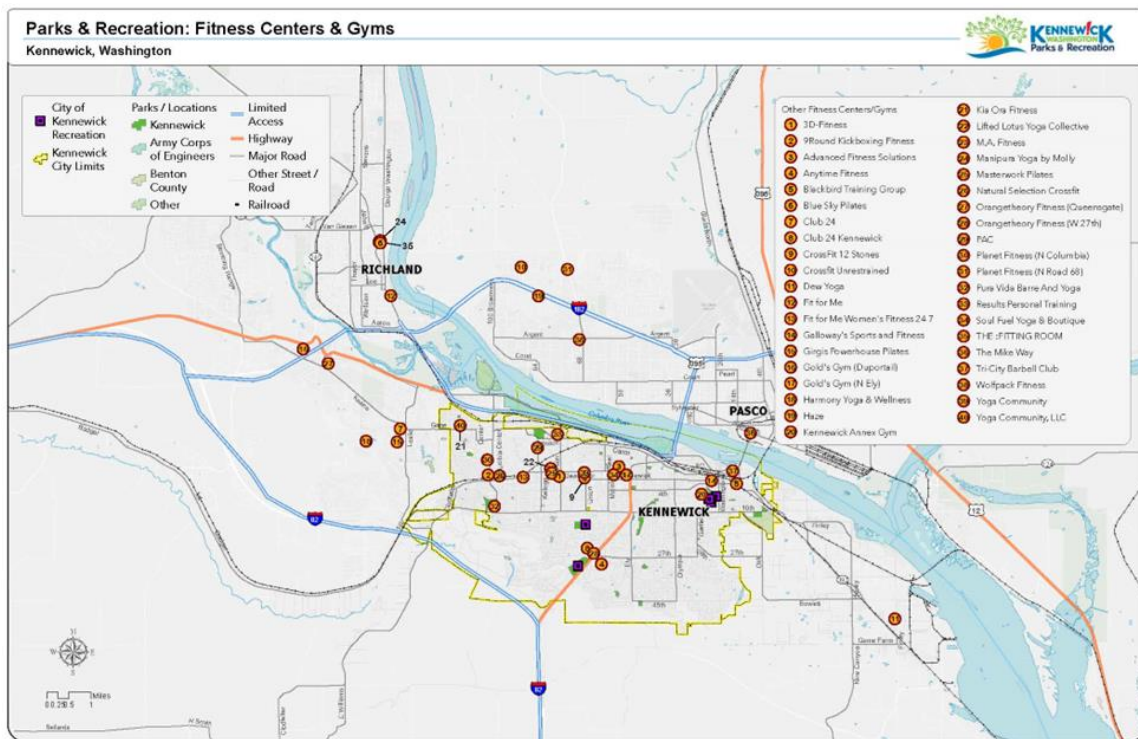
The deficiency in aquatic facilities correlates with the results of the Needs Assessment Survey, which highlighted the heightened priority placed on aquatic facilities by the community. Out of the seven identified aquatic facilities, only one offers public swim opportunities. The absence of Recreation Centers is also consistent with the survey results, which indicated that 73% of Kennewick respondents are very or somewhat supportive of developing a multiuse recreation facility.

The following series of maps displays alternative service providers with an orange icon, and City of Kennewick parks and facilities with purple squares.

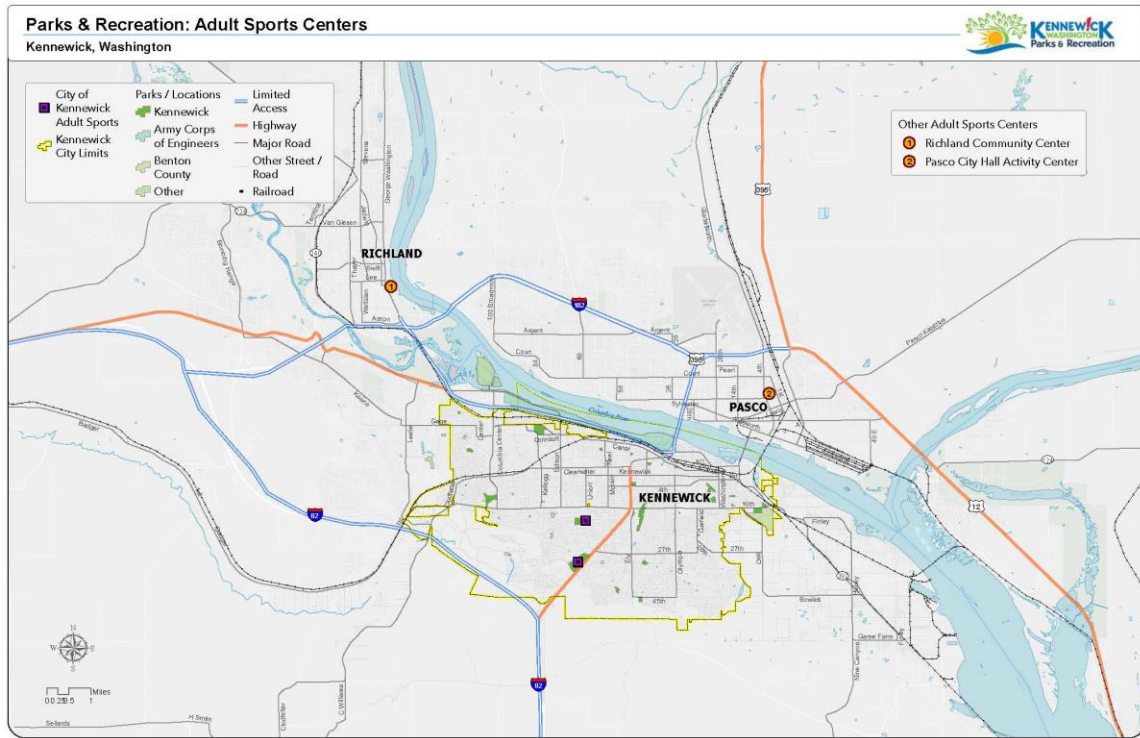
Map 7: Aquatic Facilities



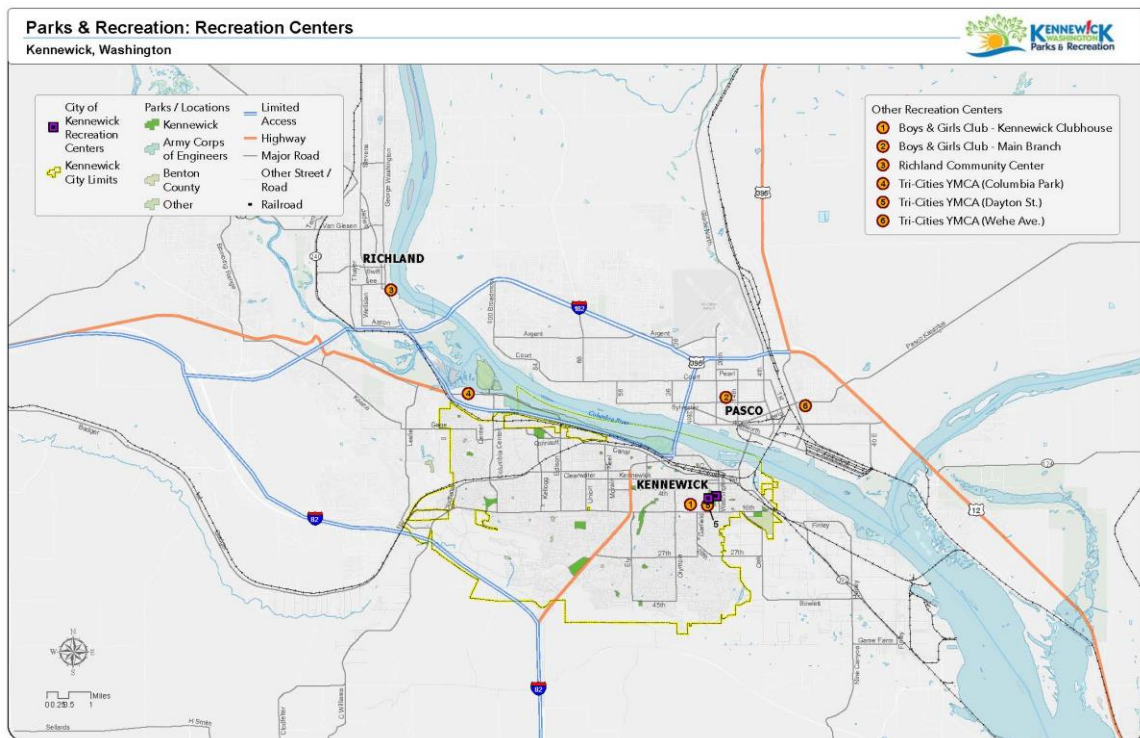
Map 8: Fitness Centers and Gyms



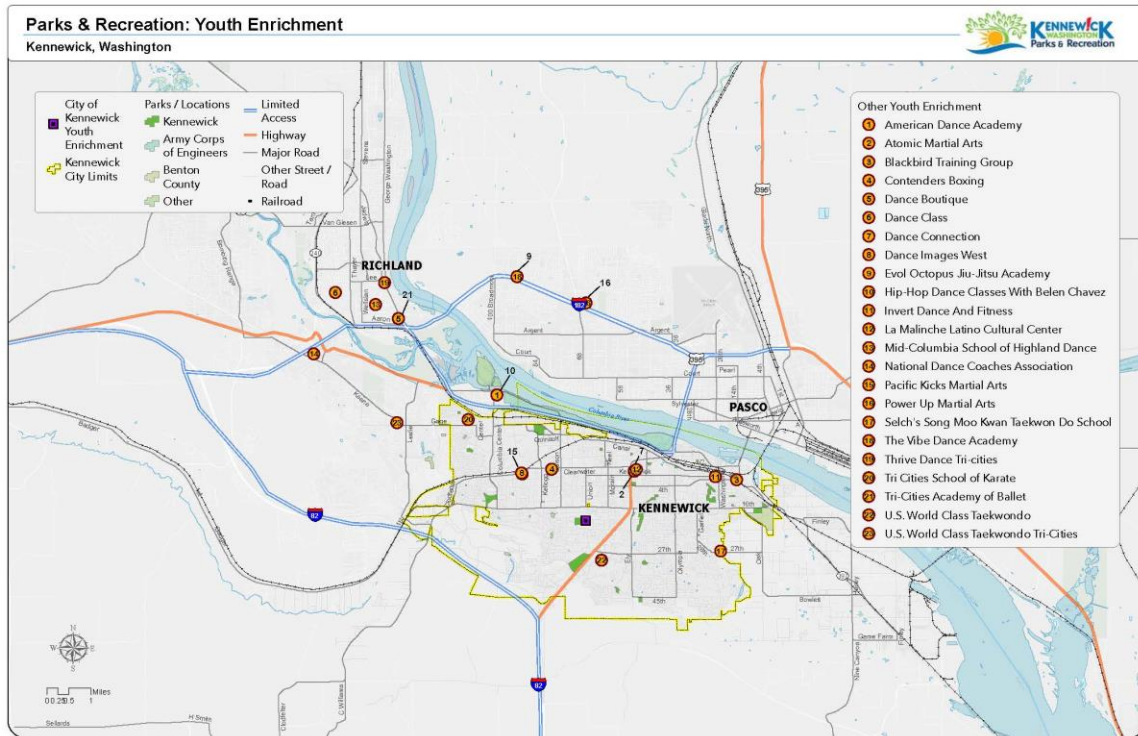
Map 9: Adult Sports Centers



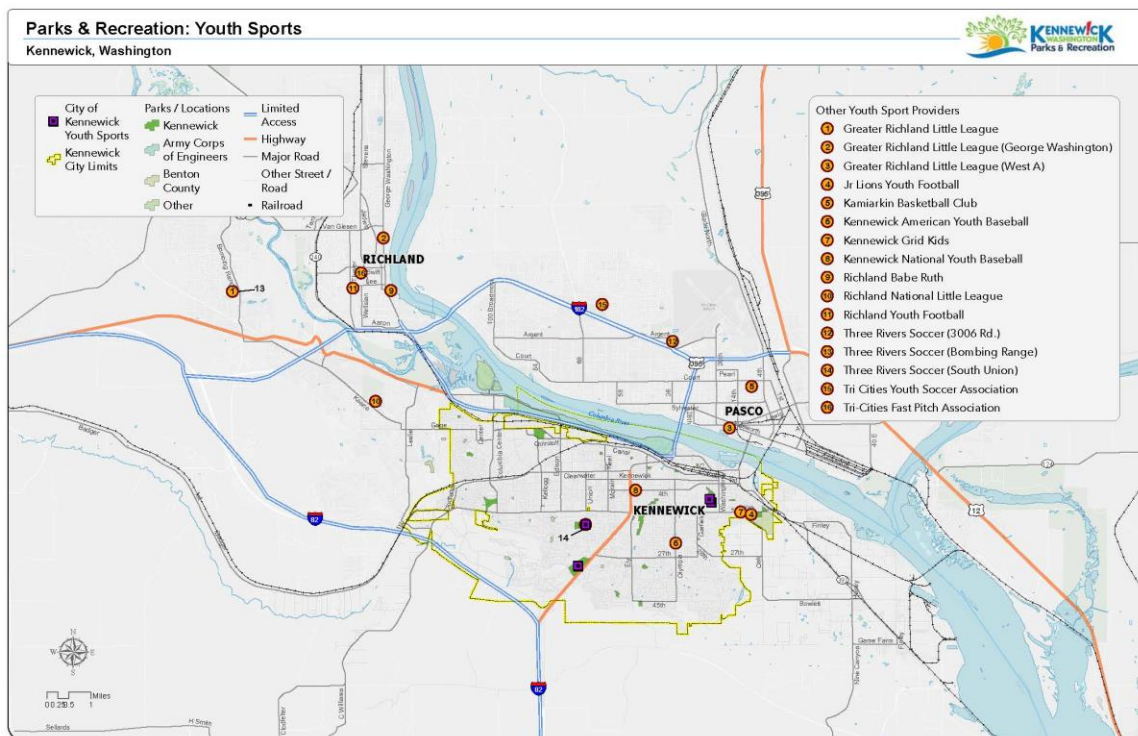
Map 10: Recreation Centers



Map 11: Youth Enrichment



Map 12: Youth Sports



Chapter Seven: Implementation Plan and CIP

The Implementation Plan and CIP are geared toward preserving and safeguarding KPR's current resources, while also setting up the operational foundations needed to realize the City's vision. The Implementation Plan delineates the initiatives and objectives to support City priorities. The CIP outlines the expected capital expenses for the plan's recommendations and establishes a prioritized implementation roadmap for the next six years. Together, they serve as a guiding framework, aligning with KPR's commitment to

"Intentional development of parks and recreational experiences of the highest quality, ensuring opportunities for all, while focusing on sustainability, fostering community bonds, and creating memories that last a lifetime."



Vision

Enhancing premiere experiences for all through dynamic spaces where connections deepen, and thriving communities create unforgettable memories.

Mission

Intentional development of parks and recreational experiences of the highest quality, ensuring opportunities for all, while focusing on sustainability, fostering community bonds, and creating memories that last a lifetime.

7.1 Introduction

The Implementation Plan identifies five initiatives to support the City of Kennewick priorities. Each initiative is accompanied by objectives to guide the Department for the next six years. **Priority objectives are shown in bold text.**

The plan improvements will require additional funding sources and FTEs to complete. Many factors, both inside and outside KPR's control, will define the implementation of the Plan. The realization of the plan will address needs and desires of the Kennewick community and establish a solid foundation for City's long-term success.

Figure 29: Priorities and Initiatives



7.2 Initiative One: Organizational Excellence and Financial Stewardship

This initiative aligns with the City of Kennewick's priority of "Responsible Government." Organizational excellence and sound financial management are essential for the sustainability and growth of KPR. Optimizing resources, improving efficiency, and fostering a culture of continuous improvement will help ensure KPR operates effectively and efficiently. These efforts underscore KPR's dedication to responsible governance within the City.

Objectives:

1.1	Implement the recommended organizational chart as a means to improve morale, address deferred maintenance, and enhance the standard of care for parks, facilities, and trails. The addition of 12 FTE over the next six years is recommended. Suggested positions are out lined in Chapter Two. To address immediate departmental needs, a Project Supervisor, two Crew Leaders, and a Strategic Partnership Manager should be added in the near term.
1.2	Facilitate and encourage opportunities for staff engagement, involvement, and recognition to foster a positive and collaborative work environment.
1.3	Implement a process for soliciting feedback from staff regarding operational challenges and improvement suggestions.
1.4	Conduct regular evaluations of departmental operations to identify areas for streamlining processes and improving efficiency.
1.5	Provide ongoing professional development opportunities for staff to enhance skills, leadership, and departmental effectiveness.
1.6	Evaluate dedicated Parks and Recreation funding sources such as a voter-approved Metropolitan Park District (MPD) to provide a dedicated funding source for parks, trails, and recreation programs.
1.7	Explore the implementation of a recreation revolving fund. This fund should have the flexibility to accumulate resources over time without being classified as part of the general fund. These accumulated funds can then be strategically allocated to bolster recreation programming and activities, or enhance park infrastructure.
1.8	Establish a formal planning partnership with regional partners, including Cities of Pasco and Richland, to plan for amenities that serve the entire region.
1.9	Maintain a capital improvement program, which specifies a six-year schedule for component replacement and park development. Allocate funding for park development projects based on identified priorities and community feedback.
1.10	Use alternative and dedicated funding mechanisms such as sponsorships, advertising, and other revenue sources to support parks and recreation programs and facilities.

1.11	Collaborate closely with the school district and special interest user groups to foster shared recreational facilities and programs. Prioritize finalizing a Memorandum of Understanding (MoU) with the school district to formalize and solidify this partnership.
1.12	Utilize the newly integrated maintenance management software to establish a comprehensive preventive maintenance strategy, encompassing scheduled inspections, assessments, and proactive repair and replacement of infrastructure, systems, and assets.
1.13	Explore the implementation of automated field lighting systems to improve efficiency.
1.14	Shift from instructor-led program registrations to a department-managed registration process. All registration fees should be directed to the City, with instructor compensation disbursed by the City in accordance with their contractual terms.
1.15	Pilot new technologies through small-scale projects to assess their viability and impact.

7.3 Initiative Two: Maintain Recreation Infrastructure

This initiative aligns seamlessly with the City of Kennewick's priority of "Infrastructure and Growth." By focusing on maintaining high-quality parks, facilities and trails, this initiative contributes to the City's broader infrastructure by providing essential amenities and recreation facilities for its growing community.

Objectives:

2.1	Allocate sufficient resources for park maintenance to help ensure high-quality standards. Gradually, increase per-acre spending by about 26% over the six-year life of the plan, amounting to an annual investment increase of \$982,734. To align with operational needs, it is advisable to augment Park and Facilities Services by approximately 5 FTEs over the plan's duration.
2.2	Implement maintenance and operations management standards. KPR should adopt a maintenance and operation program and plan that is reviewed periodically for the management of all park and recreation areas and facilities. Each facility should be assigned an appropriate set of maintenance standards, including both recommended frequency and acceptable quality. See Appendix B for standard of care (frequency) and Appendix C for maintenance standards (quality).
2.3	Develop a comprehensive preventative maintenance plan to provide periodic/scheduled inspections, assessment and repair, and replacement of infrastructure, systems, and assets.
2.4	Perform an annual park audit using GRASP® GIS. Prioritize improvements based on annual identification of low-scoring components.
2.5	Adopt standards for park features, such as benches, pour-in-place playground surfacing, ramadas, signage, courts, and trash receptacles.
2.6	Develop a Trails Master Plan. - Consider a range of trail types to accommodate various activities, including walking, hiking, biking, and jogging. - Design trails with universal accessibility in mind, incorporating features like smooth surfaces and gradual slopes. - Gather input from trail users and local residents to understand preferences and prioritize improvements based on community needs. - KPR should also coordinate with regional partners such as Visit Tri-Cities, the Kennewick Irrigation District, and the Benton-Franklin Council of Governments on regional trail planning, wayfinding, and other projects related to access and nonmotorized transportation and connectivity. - Work with the Kennewick Irrigation District, promoting the retrofitting of open canals into underground pressurized systems to allow the rights of way as accessible pathways and trails.

2.7	Implement a routine inspection and maintenance schedule for trails, addressing issues such as erosion, signage, and accessibility. • Zintel Canyon is a nature trail that is under-utilized and requires mitigation to function as intended. Identify priority needs and long-term goals to increase use and safety. • Establish a dedicated trail maintenance team to help ensure regular upkeep and safety. Implement a trail repair and improvement schedule to address safety concerns and optimize trail accessibility.
2.8	Organize quarterly volunteer-driven trail clean up events to engage the community.

7.4 Initiative Three: Enhance Community Safety through Safe Parks

This initiative aligns with the City of Kennewick's priority of "Community Safety." Safe parks not only enhance community well-being but creates welcoming spaces for residents of all ages to participate in recreational activities with confidence.

Objectives

3.1	Explore Parks Ranger staff program similar to regional agencies.
3.2	Implement safety measures, including adequate lighting, clear signage, and well-marked paths, to enhance user safety on trails and within park spaces.
3.3	Conduct regular safety audits to identify potential hazards and areas for improvement.

7.5 Initiative Four: Provide Inclusive Access to Parks, Programs, and Trails

Ensuring all residents have access to parks, programs, and trails enriches the community's quality of life, aligning with the City of Kennewick's central priority. Through comprehensive offerings, KPR serves the diverse needs of all residents contributing to community vitality.

Objectives:

4.1	Adopt a LOS standard of four recreational components in a one-mile proximity. Low-service areas currently account for 7% of land area. These areas, by definition, have current service, but the service does not currently meet the goal of four recreational components within a one-mile drive. • Develop, partner with, or acquire facilities to help bridge the gap between existing and needed recreational facilities, particularly in underserved locations. • Initiate a Master Plan for the undeveloped acres at Southridge Sports Complex to enhance southwest Kennewick's recreational offerings.
4.2	Explore the potential of developer land dedication to expand recreational spaces. Collaborate with local planning bodies to establish transparent and equitable criteria for assigning developer land donations.
4.3	Collaborate with disability advocacy groups to identify specific needs and implement changes that cater to a diverse range of abilities.
4.4	Develop and distribute multilingual materials and communications for equitable access to information about park offerings and events.
4.5	Collaborate with community organizations representing various cultural groups to design culturally relevant programming that fosters inclusivity.
4.6	Create a transparent financial assistance application process, making it easy for eligible individuals to access support.
4.7	Regularly assess the success and impact of existing recreational programs and events to gather feedback for improvement.
4.8	Develop creative and engaging programs that cater to both established and emerging recreational interests. In response to survey findings, consider introducing offerings in the following categories: • Arts and culture • Fitness and wellness • Hobbies and life skills This expansion should also address age-group gaps, with a focus on serving teens, adults, and seniors.

7.6 Initiative Five: Leverage the Potential of Recreation as an Economic Driver

This initiative directly aligns with the City of Kennewick's priority for "Economic Development". By focusing on recreation as an economic driver, this initiative acknowledges the significant economic benefits that vibrant recreation offerings can bring to the City. Quality recreational facilities attract visitors, tourists, and businesses to the area, stimulating economic activity. By fostering economic growth through recreation, Kennewick can create new job opportunities, increase revenue streams, and enhance the overall economic vitality of the City.

Objectives:

5.1	Develop a Feasibility Study for the construction of a state-of-the-art recreation center, encompassing facility design, budget allocation, community input, and coordination with relevant stakeholders.
5.2	Conduct a thorough assessment of KSMP to determine the need for a new pool facility, including feasibility studies, budget considerations, and community demand. Explore potential collaboration with the Kennewick School District to enhance project viability and impact.
5.3	Collaborate with stakeholders to enhance riverfront properties for recreational use. - In conjunction with the neighboring jurisdictions and stakeholders in the community, continue to work with federal legislators and the U.S. Army Corps of Engineers (USACE) to allow conveyance of the shoreline that is currently owned by the USACE and leased to the local jurisdictions to maintain. Take advantage of the river frontage as a recreational, natural, and scenic asset. - Develop Columbia Park in accordance with the 2018 Columbia Park Master Plan Vision. This includes development of Columbia Park, the Columbia Levee, adjacent lagoons, wetlands, access points and other riverfront property for water access and natural resource recreation.
5.4	Perform a comprehensive facility audit of the Kennewick Activity Center to assess its viability for future use.

7.7 Six-Year CIP

At the heart of this implementation plan lies the CIP, serving as the cornerstone for guiding the development, and revitalization of park spaces and facilities. Spanning six years, this plan hinges on the availability of funds and remains adaptable.

All cost estimates are based on 2024 figures and were provided by Washington licensed Landscape Architects at Bernardo Willis. Estimates are dependent on the extent of the enhancements and improvements known at this time. Estimates of probable costs are shown in today's dollars and are a Rough Order of Magnitude (ROM) intended for general budget purposes. They are not detailed cost estimates and will require additional research as designs continue to be developed in the future. As a best practice, however, ROMs are derived from reputable databases, such as RSMeans Data Online. They are also based on "real world" numbers, including previous bid figures and/or direct communication with contractors, vendors, and manufacturers.

The ROM for the six-year CIP is \$10.5 million.

Table 15: 2024 – 2029 CIP

Facility	Rough Order of Magnitude
Columbia Center Estates Park	\$ 1,423,746
Add shelter (16x16)	\$ 154,746
Splash pad replacement	\$ 1,269,000
Eastgate Park	\$ 364,212
Upgrade irrigation and reorient fields	\$ 197,400
Repair, upgrade and enhance the loop walk.	\$ 166,812
Derelict Building Demolition	\$ 325,000
Remove horseshoe pits, update seating area and diamond	\$ 325,000
Fruitland Park	\$ 208,145
Remove horseshoe pits, update seating area and diamond	\$ 208,145
Hawthorn Park	\$ 91,650
Add shelter (16x16)	\$ 91,650
Highlands Grange Park	\$ 1,476,270
Splash pad replacement	\$ 1,269,000
Several amenities are showing ware, including trash cans and benches	\$ 207,270
Horse Heaven Hills Park	\$ 881,250
Playground and surface replacement	\$ 881,250
Jay Perry Park	\$ 130,264
Court hoops and nets	\$ 105,644
Improved accessibility to the community garden	\$ 24,620
Kenwood Park	\$ 290,674
Court hoops and resurfacing (concrete)	\$ 203,005
The addition of park paths and seating	\$ 87,669
Lawrence Scott Park	\$ 4,366,311
Synthetic Turf Fields. includes fencing, backstops and fabric	\$ 1,200,000
Building renovation, field lights and concrete replacement	\$ 1,800,000

Basketball court and three pickleball courts are due for resurfacing (concrete)	\$	616,311
Destination size playground and reconceptualized entry/concrete area	\$	750,000
Layton Park	\$	572,180
Small back stop in south/east corner and soccer goal posts	\$	32,430
Shelter Removal	\$	11,000
New pre fab restroom	\$	528,750
Recreation and Aquatics Center Feasibility Study	\$	120,000
Feasibility Study	\$	120,000
Underwood Park	\$	145,000
Swing set replacement	\$	145,000
Yelm Park	\$	111,038
Accessible picnic grove	\$	111,038
Grand Total	\$	10,505,739

Funding Sources

The Capital Improvement Fund accounts for the acquisition or construction of major capital assets, including continued development of City parks. Sources of revenue include taxes, state grants, federal grants, impact fees, contributions, and allocations from the Park Reserves and Recreational Trails and Paths Funds.

Some funding sources are dedicated to parks and recreation. The Recreational Trails and Paths Fund receives revenue from 0.5% of the motor vehicle fuel tax, according to provisions of RCW 46.68. These funds are to be expended for the planning, accommodation, establishment, and maintenance of facilities for pedestrian, equestrian, or bicycle traffic.

Park impact fees are levied on new housing construction to fund system improvements related to new growth. A per-unit fee, park impact fees are collected at the time a project is issued a building permit. Impact fee revenues go to a separate fund and are dedicated to park capital projects. Once collected, fees are placed into the park reserve fund and are used for the acquisition or development of park and recreation facilities within the designated park service area for which the fees were imposed. Fees are meant for park development within the area they are collected. In the past, this was limited to small geographical area. This limited the ability for the City to “pool funds” to make more substantial improvements. In 2018, two park zones were established to designate the location for where park funds shall be employed.

Future Funding Considerations

There are additional funding sources that should be considered to realize the plan recommendations. This section details potential opportunities for KPR to pursue.

Partnerships

KPR proactively partners with other recreational providers to create a broader range of activities and programming opportunities. The services are especially designed to meet the physical, mental, cultural, and social needs of residents while enhancing their quality of life. Partnering

with neighboring municipalities, local schools, nonprofit organizations, and private businesses can give residents access to a much more diverse array of recreational opportunities. It can also increase the user base for existing programs and facilities.

Partnerships can help accomplish tasks with limited resources, respond to compelling issues, encourage cooperative interaction and conflict resolution, involve outside interests, and serve as an education and outreach tool. Partnerships can take the form of cash gifts and donor programs, improved access to alternative funding sources, property investments, charitable trust funds, labor, materials, equipment, sponsorships, technical skills and/or management skills, and other forms of value.

Partnerships are typically associated with collaborations between public and private entities; however, they also extend to alliances between public agencies, nonprofit organizations, and other governmental bodies. To enhance service offerings, KPR should persist in nurturing partnerships with fellow public agencies like the Kennewick School District, City of Pasco, City of Richland, Benton County, and State of Washington. Additionally, forging alliances with partner organizations like Friends of Badger Mountain and Chinook Cycling Club can further enrich opportunities.

Recreation Revolving Fund

A recreation revolving fund is a financial mechanism often used by government agencies or organizations responsible for managing recreational facilities and programs. It operates by allowing the generated revenues from recreational activities, user fees, rentals, and other related sources to be collected and kept within a separate fund. This fund is then utilized to cover the costs of maintaining, improving, and expanding recreational facilities and programs.

The term "revolving" implies that the fund sustains itself through the cycle of generating revenue, which is then reinvested into the maintenance, operation, and development of recreational assets. This approach can create a self-sustaining model where user fees and generated income contribute to the ongoing enhancement and sustainability of the recreational offerings, reducing the reliance on external funding sources.

Land Dedication Requirement

Land dedication requirement refers to a policy or practice where property developers are required to dedicate a portion of their land for public use or community development as a condition of receiving development approvals.

For example, a city or municipality may require a developer to set aside a certain percentage of their land for parks, green spaces, schools, or other public amenities. This helps ensure that as new developments are built, there is also an expansion of public facilities and spaces to accommodate the growing population.

Developer land dedication is a common practice used by local governments to help balance the need for urban development with the preservation of public spaces and community infrastructure. It contributes to the creation of well-planned and livable communities.

Metropolitan Park District (MPD)

MPDs have become an important tool for communities in Washington to secure dedicated funding for parks and recreation, helping to ensure the availability of quality recreational opportunities for residents. Each MPD's structure and offerings vary based on the needs and desires of the community it serves. The creation of an MPD and any subsequent tax levies require voter approval through a ballot measure. Residents within the proposed district vote on whether to establish the district and authorize property tax levies to support its operations.

MPDs are authorized to levy property taxes within their boundaries to generate revenue for park and recreational services. This local funding source allows MPDs to finance the acquisition, development, and maintenance of parks and facilities independently. The service area of an MPD is determined by the district's boundaries, which may encompass one or more cities or unincorporated areas. The district's services are intended to benefit the residents and properties within these boundaries.

The property tax revenue collected by an MPD is dedicated solely to park and recreational purposes. This dedicated funding source allows MPDs to plan and invest in parks, facilities, and programs for the long term.

Washington Wildlife and Recreation Program

The primary land conservation grant program managed by the Washington Recreation and Conservation office is called the Washington Wildlife and Recreation Program (WWRP), which was created by the Legislature in 1989. WWRP is funded by appropriations in Washington State's capital construction budget, primarily from the sale of general obligation bonds. The legislature establishes funding levels for WWRP on a biennial basis at approximately \$50 million. According to state statute, WWRP funds must be distributed equally between Outdoor Recreation and Habitat Conservation purposes. Local agencies, special purpose districts (such as park and recreation districts), state agencies, Native American tribes, salmon recovery lead entities, and nonprofits can apply for WWRP funding. Local agencies, special purpose districts, salmon recovery lead entities, and nonprofits must provide 50% match and at least 10 percent of the total project cost must be from a non-state, non-federal contribution. State agencies do not have to provide match. Native American tribes must provide 50% match.

WWRP provides funding for a broad range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities. Typical projects include protecting wildlife habitat, building athletic complexes, building or renovating community parks, protecting farmland, and developing regional trails.

7.8 Future Investment Summary: Long-Range CIP

The long-range CIP provides a long-term vision for parks, recreation, and open space in Kennewick, based on an analysis of existing conditions, community demographics, residents' needs and interests, and regional trends for parks and recreation activities. No long-range CIP can be certain of the characteristics of a dynamic population over a 15-year period. Therefore, the long-range CIP will most effectively meet the needs of Kennewick residents if it is updated

on an ongoing basis to help ensure consistency between the KPR mission and vision and residents' needs.

Projects that KPR anticipates having funding to implement in the next six years are included in the six-year CIP. Projects anticipated in the next 15 years are provided in Table 16.

Table 16: Long-Range CIP

Project and Scope
Canyon Lakes Park
Court replacement (concrete)
Hatfield Park
Playground replacement
Highlands Grange Park
Playground replacement
John Day Park
Playground replacement
Add a shelter (16x16)
Layton Park
Playground replacement
Sunset Park
Court replacement (concrete)
Safe Routes to Play: neighborhood access from the east
Columbia Center Park
Playground replacement
Fruitland Park
Playground replacement
Hansen Park
Playground replacement
Hatfield Park
Pre-fab restroom
Hawthorn Park
Playground replacement
Court replacement (concrete)
Sunset Park

Project and Scope
Add a tot lot
Underwood Park
ADA accessibility Improvements
Splashpad replacement
Yelm Park
ADA accessibility Improvements
Zintel Park
Shade structure for playground

Appendix A: GRASP® Components and Definitions

Table 17: Grasp® Outdoor Component List

GRASP® Outdoor Component List	
Component	Definition
Adventure Course	An area designated for activities such as ropes courses, zip lines, challenge courses.
Amusement Ride	Carousel, train, go-carts, bumper cars, or other ride-upon features. The ride has an operator and controlled access.
Aquatics, Complex	An aquatic complex has at least one immersion pool and other features intended for aquatic recreation.
Aquatics, Lap Pool	A swimming pool intended for swimming laps.
Aquatics, Leisure Pool	A swimming pool intended for leisure water activities. May include zero-depth entry, slides, and play-and-spray features.
Aquatics, Spray Pad	A play feature without immersion intended for interaction with moving water.
Aquatics, Therapy Pool	A temperature-controlled pool intended for rehabilitation and therapy.
Basketball Court	A dedicated full-sized outdoor court with two goals.
Basketball, Practice	A basketball goal for half-court play or practice, including goals in spaces associated with other uses like parking lots.
Batting Cage	A stand-alone facility with pitching machines and restricted entry.
Bike Complex	A bike complex accommodates various bike skills activities with multiple features or skill areas.
Bike Course	A designated area for nonmotorized bicycle use may be constructed of concrete, wood, or compacted earth. Includes pump tracks, velodrome, and skills courses.
Camping, Defined	Defined campsites may include a variety of facilities such as restrooms, picnic tables, and a water supply. Use the official agency count for quantity if available.
Camping, Undefined	Allows users to stay overnight outdoors in undefined sites and receives a quantity of one for each park or location.
Climbing, Designated	A designated natural or human-made facility provided or managed by an agency for recreation climbing but is not limited to play.
Climbing, General	Allows users to participate in a climbing activity. Use a quantity of one for each park or other location.
Concession	A facility used for selling, renting, or other provisioning of food, drinks, goods, and services to the public.

GRASP® Outdoor Component List	
Component	Definition
Diamond Field	Softball and baseball fields suitable for organized diamond sports games. Not specific to size or age appropriateness.
Diamond Field, Complex	Many ballfields at a single location suitable for tournaments.
Diamond Field, Practice	An open or grassy area used to practice diamond sports and is distinguished from a ballfield. Does not lend itself to organized diamond sports games or open turf by the presence of a backstop.
Disc Golf	A designated area for disc golf. Quantities: 18-hole course = 1; 9-hole course = 0.5
Dog Park	An area explicitly designated as an off-leash area for dogs and their guardians.
Educational Experience	Signs, structures, or features provide an educational, cultural, or historical experience. They are distinguished from public art by the presence of interpretive signs or other information. Assign a quantity of one for each contiguous site.
Equestrian Facility	An area designated for equestrian use and typically applied to facilities other than trails.
Event Space	A designated area or facility for an outdoor class, performance, or special event, including an amphitheater, bandshell, and stage.
Fitness Area	Features intended for personal fitness activities. Fitness areas are groupings of equipment in immediate proximity.
Fitness Course	Features intended for personal fitness activities are typically located along a path or trail. A course receives one for each complete grouping of fitness equipment.
Game Court	Outdoor court designed for a game other than tennis, basketball, and volleyball that is distinguished from a multiuse pad, including bocce, shuffleboard, and lawn bowling. The type specified in the comments. Quantity counted per court.
Garden, Community	A garden area that provides community members a place to have a personal vegetable or flower garden.
Garden, Display	An area designed and maintained to provide a focal point or destination, including a rose garden, fern garden, native plant garden, wildlife/habitat garden, and an arboretum.
Golf	A course designed and intended for the sport of golf counted per 18 holes. Quantities: 18-hole course = 1; 9-hole course = 0.5
Golf, Miniature	A course designed and intended as a multihole golf putting game.
Golf, Practice	An area designated for golf practice or lessons, including driving ranges and putting greens.

GRASP® Outdoor Component List	
Component	Definition
Historic Feature	A site designated to commemorate an event, person, or place of local, statewide, or national significance.
Horseshoe Court	A designated area for the game of horseshoes, including permanent pits of regulation length. Quantity counted per court.
Horseshoes Complex	Several regulation horseshoe courts in a single location. They are suitable for tournaments.
Ice Hockey	Regulation-size outdoor rink explicitly built for ice hockey games and practice.
In-Line Hockey	Regulation-size outdoor rink built specifically for in-line hockey games and practice.
Loop Walk	Opportunity to complete a circuit on foot or by nonmotorized travel mode. Suitable for use as an exercise circuit or leisure walking. Quantity of one for each park or other location unless more than one particular course is present.
Multiuse Pad	A painted area with games such as hopscotch, four square, and tetherball found in schoolyards. As distinguished from “game court,” which is typically single use.
Natural Area	Describes an area in a park that contains plants and landforms that are remnants of or replicate undisturbed native regions of the local ecology. It can include grasslands, woodlands, and wetlands.
Open Turf	A grassy area not suitable for programmed field sports due to size, slope, location, or physical obstructions. It may be used for games of catch, tag, or other informal play and uses that require an open grassy area.
Other	An active or passive component that does not fall under another definition. Specified in comments.
Passive Node	A place designed to create a pause or particular focus within a park such as seating areas, plazas, and overlooks; not intended for programmed use.
Pickleball Court	A designated court designed primarily for pickleball play.
Picnic Ground	A designated area with a grouping of picnic tables suitable for organized picnic activities. Account for individual picnic tables as Comfort and Convenience modifiers.
Playground, Destination	A destination playground attracts families from the entire community. Typically has restrooms and parking on-site. May include special features like a climbing wall, spray feature, or adventure play.
Playground, Local	A local playground serves the needs of the surrounding neighborhood. Includes developed playgrounds and designated nature play areas. These parks generally do not have restrooms or on-site parking.
Public Art	Any art installation on public property. Art receives a quantity of one for each contiguous site.

GRASP® Outdoor Component List	
Component	Definition
Rectangular Field Complex	Several rectangular fields in a single location. A complex is suitable for tournament use.
Rectangular Field, Large	Describes a specific field large enough to host one adult rectangular field sports game, such as soccer, football, lacrosse, rugby, and field hockey. The approximate field size is 180 feet by 300 feet (60 by 100 yards). The field may have goals and lines specific to an individual sport that may change with the permitted use.
Rectangular Field, Multiple	Describes an area large enough to host one adult rectangular field sports game and a minimum of one other event/game, but with an undetermined number of actual fields. This category describes a large open grassy area arranged in configurations for any number of rectangular field sports. Sports may include soccer, football, lacrosse, rugby, and field hockey. The field may have goals and lines specific to an individual sport that may change with the permitted use.
Rectangular Field, Small	Describes a specific field too small to host a regulation adult rectangular field sports game but accommodates at least one youth field sports game. Sports may include soccer, football, lacrosse, rugby, and field hockey. A field may have goals and lines specific to a particular sport that may change with a permitted use.
Shelter, Large	A ramada, shade shelter, or pavilion large enough to accommodate a group picnic or other event for a minimum of 16 seated individuals.. Address lack of seating in scoring.
Shelter, Small	A ramada, shade shelter, or pavilion large enough to accommodate a family picnic or other event for approximately 4 – 16 people, with seating for a minimum of 4. Covered benches are included in comfort and convenience scoring and should not be included here.
Skate Feature	A small or single feature primarily for wheel sports, such as skateboarding and in-line skating. The component may or may not allow freestyle biking. Categorize dedicated bike facilities as bike courses.
Skate Park	An area set aside primarily for wheel sports, such as skateboarding and in-line skating. The park may allow freestyle biking. It may be specific to one user group or allow for several user types and accommodate various abilities. Typically has a variety of concrete or modular features.
Target Range	A designated area for practice or competitive target activities. The type specified, such as archery or firearms, in comments.
Tennis Complex	Multiple regulation courts in a single location with amenities suitable for tournament use.
Tennis Court	A court suitable for recreation or competitive play. Quick-start or other nonstandard types specified in comments.

GRASP® Outdoor Component List	
Component	Definition
Tennis, Practice Wall	A wall intended for practicing tennis.
Track, Athletic	A multilane, regulation-sized running track appropriate for track and field events.
Trail Access Point	A point of connection to a trail or trail system, without amenities generally associated with a trailhead.
Trail, Multiuse	A trail, paved or unpaved, is separated from the road and provides recreational opportunities or connections to walkers, bikers, rollerbladers, and equestrian users. Paths that make a circuit within a single site are loop walks.
Trail, Primitive	An unpaved path within a park or natural area that provides recreational opportunities or connections to users. Minimal surface improvements that may or may not meet accessibility standards.
Trail, Water	A river, stream, canal, or other waterway trail for floating, paddling, or other watercraft.
Trailhead	A designated staging area at a trail access point may include restrooms, an information kiosk, parking, water fountains, trash receptacles, and seating.
Volleyball Court	One full-sized court. It may be a hard or soft surface, including grass and sand. May have permanent or portable posts and nets.
Wall Ball Court	Walled courts are associated with handball and racquetball—the type specified in the comments.
Water Access, Developed	A developed water access point includes docks, piers, kayak courses, boat ramps, and fishing facilities. It is specified in comments, including the quantity for each unique type.
Water Access, General	Measures a user's general ability to access the edge of open water. May include undeveloped shoreline. Typically receives a quantity of one for each contiguous site.
Water Feature	This passive water-based amenity provides a visual focal point of fountains and waterfalls.
Water, Open	A body of water, such as a pond, stream, river, wetland with open water, lake, or reservoir.
Winter Sport	An area designated for a winter sport or activity. For example, a downhill ski area, Nordic ski area, sledding hill, toboggan run, and recreational ice. The type specified in the comments.

Appendix B: Standard of Care

The standard of care is based on a level (e.g., 1, 2, and 3) and mode (tasks and frequencies of each task) and follow NRPA best practices.

Level 1 (white): Very high-maintenance applications usually associated with high-use/high-participation elements that predominately provide upper gradient programs and services. Any element with a very high safety risk exposure (i.e., play equipment) are considered Level 1. Additionally, certain environmentally-sensitive areas are considered Level 1.

Level 2 (light blue): High-level maintenance applications usually associated with reasonably moderate visitation that accommodates structured recreational gradient programs and services.

Level 3 (turquoise): Moderate- to low-maintenance applications usually associated with low levels of visitation.

Table 18: Current Standard of Care

Task	KPR's Current Level	Level 1	Level 2	Level 3
Turf				
Mow/Trim/Blow Clippings	1x/7 days	1x/7 days	1x/7 – 10 days	1 or 2x/year
Aerate	As needed	2x/year	1x/year	As needed
Overseed	Not performed	1x/year	As needed	Not performed
Fertilize	Not performed	2 – 4x/year	1x/year	Not performed
Apply weed control	1x Year	2x/year and as needed	As needed	As needed
Trim shrubs	As needed	1x/7 days	1x/year	As needed
Pick up trash prior to mowing	1x/7 days	1x/7 days	1x/10 days	1x/10 days
Control pest	As needed	Biweekly	As needed	As needed
Manage leaves	2x/year and as needed	2x/year and as needed	2x/year and as needed	1x/year
Line trim	1x/week	1x/week	1x/week	Monthly
Edge	As needed	1x/month	1x/year	As needed
Pavilion/Shelters/Picnic Areas				
Clean and Sweep/Blow	As needed	Daily	Weekly	As needed
Remove and/or replace garbage bags and trash cans	As needed	Daily	As needed	As needed
Paint	As needed	As needed	As needed	As needed
Power wash	As needed	Daily	Weekly	As needed
Inspect electrical system	1x/year	1x/year	1x/year	1x/year

Inspect picnic tables	Monthly	1x/week	1x/week or as needed	Monthly
Restrooms				
Clean and restock	Daily	1x/day (weekdays); 2x/day weekend	Daily	Daily
Repair vandalism	As needed	As needed	As needed	As needed
Remove and/or replace garbage bags and trash cans	Daily	Daily	Daily	As needed
Mechanical inspection (plumbing)	1x/month	Weekly	1x/month	1x/month
Schedule Lighting/Mechanical systems	1x/year	1x/week	1x/week	1x/year
Seasonal start-up and close-down	2x/year	2x/year	2x/year	1x/year
Fence				
Inspect	1x/year and following storms	Monthly	1x/year and following storms	1x/year and following storms
Repair	As needed	As needed	As needed	As needed
Replace	As needed	As needed	As needed	As needed
Repaint	As needed	As needed	As needed	As needed
Vegetation Control	1x/year and as needed	1x/year and as needed	1x/year and as needed	1x/year and as needed
Mulching				
Apply mulch	As needed	2x/year	1x/year	As needed
Weed control	As needed	2x/year	1x/year	As needed
Playgrounds				
Inspect and document	Bimonthly (4x/year)	Weekly	Monthly (7x/year)	Bimonthly (4x/year)
Major inspection	Semiannually	Monthly	Semiannually	Annually
Repair	As needed	As needed	As needed	As needed
Clean and pick up trash	Daily	Daily	Daily	Weekly
Remove graffiti	As needed	As needed	As needed	As needed
Inspect water fountains	As needed	Weekly	Monthly	As needed
Seal rubberized, poured in place	Every 2 years	Annually	Annually	Every 2 years
Replace	Every 15 years	Every 10 years	Every 15 years	As needed
Inspect for Pest/Bees/etc.	Monthly	Weekly	Monthly	As needed
Clean and Sweep/blow	Daily	Daily	Weekly	As needed

Sports Field Turf				
Mow/Trim/Blow Clippings	1x/7 days	1x/7 days	1x/7 – 10 days	1 or 2x/year
Aerate	1x/year	2x/year	1x/year	As needed
Overseed	As needed	1x/year	As needed	Not performed
Fertilize	1x/year	2 – 4x/year	1x/year	Not performed
Apply weed control	As needed	2x/year and as needed	As needed	As needed
Pick up trash prior to mowing	1x/7 days	1x/7 days	1x/10 days	1x/10 days
Control pest	As needed	Biweekly	As needed	As needed
Manage leaves	2x/year and as needed	2x/year and as needed	2x/year and as needed	1x/year
Line Trim	1x/week	1x/week	1x/week	Monthly
Edge	1x/month	1x/month	1x/year	As needed
Artificial Turf				
Repairs	1 or 2x/year	1x/7 days	1x/7 – 10 days	1 or 2x/year
Infill	As needed	2x/year	1x/year	As needed
Inspection gmax testing	Not performed	1x/year	As needed	Not performed
Groom	1x/year	2 to 4x/year	1x/year	Not performed
Sports Court				
Pressure washing	Not performed	1x/7 days	1x/7 – 10 days	1 or 2x/year
Inspection	Not performed	2x/year	1x/year	As needed
Line Striping	As needed	1x/year	As needed	Not performed
Fence Maintenance	As needed	2 – 4x/year	1x/year	Not performed
Apply weed control	As needed	2x/year and as needed	As needed	As needed
Trim shrubs	As needed	1x/7 days	1x/year	As needed
Manage leaves (blowing)	1x/year	2x/year and as needed	2x/year and as needed	1x/year
Landscape Bed Maintenance				
Prune trees	As needed	1x/7 days	1x/7 – 10 days	1 or 2x/year
Fertilize	Not performed	2 – 4x/year	1x/year	Not performed
Apply weed control	As needed	2x/year and as needed	As needed	As needed
Trim shrubs	As needed	1x/7 days	1x/year	As needed
Pick up trash	1x/7 days	1x/7 days	1x/10 days	1x/10 days
Control Pest	Not performed	Biweekly	As needed	As needed
Manage leaves	2x/year and as needed	2x/year and as needed	2x/year and as needed	1x/year
Line trim	1x/week	1x/week	1x/week	Monthly
Edge	As needed	1x/month	1x/year	As needed

Appendix C: Maintenance Standards

These general maintenance standards are meant to serve as starting points for KPR to review and consider as a basic desired maintenance standard for all parks and recreational facilities.

Parks

Grounds

- Grounds mowed and trimmed regularly
- Park is free of litter, debris, and hazards
- Parking lots, if applicable, are clean, striped, and free of debris, holes, and tripping hazards

Drinking Fountains (Where Applicable)

- Fountains are accessible and operational
- Fountains are in appropriate locations and comply with ADA requirements
- Fountains are installed on a solid surface and free of standing water and debris
- Drain system is operational

Signage

- Park identification signs are secure and properly installed in a noticeable location
- Handicapped parking signs are secure, visible, and installed to code
- Park rules signs are secure and properly installed in a noticeable location
- Restroom signs are secure and visible
- Signs are clean, painted, and free of protrusions and graffiti
- Directional signs provided as needed in appropriate locations
- Signs include the KPR logo and contact phone number

Ornamental Plants and Trees

- Plants and trees are healthy and free of disease and insects
- Plant beds are free of litter, debris, and weeds
- Plant selection is appropriate for season and area usage
- Trees trimmed and shaped regularly; inspect and remove hazardous trees as needed

- Tree species selection should provide a wide variety of native and selected non-native trees where appropriate
- Tree wells and planting beds mulched for protection and water conservation

Walkways and Trails

- May be hard surface or soft surface depending on location and intended use
- Soft-surface trails are free of water-collecting depressions and erosion
- Walkways and trails have a uniform surface, have positive drainage, are level with the ground, and free of trip hazards and excessive material deflection
- Walkways and trails are free of litter, debris, sediment, and seasonal snow
- Walkways and trails meet ADA requirements
- Walkways and trails provide unobstructed access and are free from low and protruding tree limbs, guide wires, signposts, and ornamental plants
- Walkways in irrigated park areas are neatly edged
- Walkways and trails are clear of weeds and grass growth in cracks and expansion joints; adequate trash receptacles provided
- Guard rails and safety fencing provided in appropriate locations
- Routine safety and function inspections are performed including surface, culverts, water crossings, signage, and vegetation

Trash Receptacles (Random Locations)

- Receptacles are clean and free of odor with liners in place
- Receptacles are painted, free of damage and missing parts, and properly anchored
- Roll-off containers and dumpsters are clean, screened, and placed in nonintrusive locations
- Area around trash receptacles is clean and free of trash and debris
- Area around roll-off containers and dumpsters is clean and free of trash and debris

Fencing

- Fences are intact, structurally sound, and free of damage or deterioration
- Nails, bolts, and screws are flush with surface with no exposed sharp points
- Fences have no excessive voids, cracks, or splintering

Security and Exterior Lights

- In total, 90% of security and exterior lights are operational
- No electrical conducting wires are exposed
- Lights comply with appropriate building code
- Poles and components are secured in the ground and are operational and straight

Bridges

- Bridges have a uniform surface, are free of trip hazards, and are free of graffiti
- Lumber and other materials are structurally sound, free of cracking deterioration and splintering
- Bridges comply with ADA requirements
- Bridges have handrails intact and properly installed and anchored
- Bridges are free of litter and debris

General Use Turf Areas

- Turf areas are free of litter and debris
- Turf areas are mowed and trimmed regularly
- Turf areas have a uniform surface and are well drained
- Areas have clean trash receptacles in good condition
- Turf is free of disease, insects, and weeds
- Supplemental irrigation is provided as needed
- Turf areas are fertilized and aerated regularly

Athletic Use Turf Areas

- Turf areas are free of litter and debris
- Turf areas are mowed and trimmed according to usage schedule
- Turf areas have a uniform surface and are well drained
- Playing surface maintained according to sport-specific guidelines
- Areas have clean trash receptacles in good condition
- Turf is free of disease, insects, and weeds
- Supplemental irrigation is provided as needed

- Turf areas are fertilized and aerated regularly

Irrigation

- Irrigation system is fully operational with complete and uniform coverage
- System is free of leaks; backflow prevention devices are in place and functioning properly
- Heads are installed properly for intended use
- Heads are properly adjusted with rotations and arcs to reduce water runoff
- Systems are set to run at specific times to minimize evaporation and waste
- System function checks are conducted regularly
- Repair excavations are properly compacted, and turf is restored

Open Space Areas

- Native grasses are mowed, if necessary, according to specific management plans, with focus on promoting natural growth heights and cycles and wildlife habitat
- Trail corridors and picnic areas are mowed as needed
- Trail surfaces are free of debris and weeds
- Native tree and shrub growth are encouraged
- Wildlife habitat and water quality preservation are emphasized
- Rules and regulations and identification signs are posted in noticeable locations
- Annual and noxious weeds are controlled as needed
- Property access points and boundaries are clearly marked

Athletic Facilities and Competitive Play Fields

Turf

- Turf has a healthy, dense stand of grass, and coverage is no less than 95% of playable area
- Play area has a uniform surface and is well drained
- Turf to be mowed at the appropriate height for the type of grass used, time of season, and type of field use
- Turf is free of any litter or debris
- Apply top dressing and over seeding, as needed, to maintain healthy grass

- Fields may be closed for use periodically to allow for turf recovery
- Turf is free of disease, insects, and weeds

Artificial Turf

- To help ensure a synthetic turf field is operating at its best, conducting a GMAX test annually is recommended; GMAX scores should not exceed a score of 200 G's according to American Society of Testing Materials International, or a score of 165 G's according to the Synthetic Turf Council
- Sweep and drag to keep the carpet fibers in an upright position; once a week or once a month depending on use
- Loosen and redistribute infill to improve footing, reduce static electricity, and improve the look of the field; groom fields before each game
- Check and replenish the infill level, especially in high-use areas; the infill creates the padding and shock absorption for the synthetic turf system and restores the field's resiliency at least once a year (it takes about 20 tons of crumb rubber to provide a 0.25-inch layer)
- Use a vacuum or leaf blower to remove debris, like sunflower seeds, weekly
- Treat turf with antimicrobial products to remove bacterial growth, weekly to monthly
- Troubleshoot for common problems and minor repairs, such as seam repair

Softball Infields

- Infields have a uniform surface and are free of lips, holes, and trip hazards
- Infields are well drained with no standing water areas
- Infields have proper soil composition for intended use, with ballfield mix added as needed
- Infields are free of weeds and grass
- Infields are free of rocks, dirt clods, and debris
- Bases and plates are properly installed, level, at proper distances, and anchored according to manufacturer's specifications and league requirements
- Fields dragged and lined as needed according to use schedules

Bleachers

- Hardware is intact, and bracing and safety rails are tightly connected
- Seating surface is clean, smooth, free of protrusions, and have no exposed sharp edges or pointed corners

- Clean trash receptacles provided and in good condition; the area under the bleachers is free of trash

Lights

- Electrical system and components are operational and comply with applicable building codes
- A majority (90%) of lamps for each field are operational
- No electrical conducting wires exposed
- Ballast boxes and components are properly installed and secured
- Lights provide uniform coverage on facilities and fixtures and are adjusted to eliminate dark or blind areas
- Fixtures securely fastened to poles, with poles secured in the ground according to manufacturer's specifications
- Poles and fixtures inspected immediately after any major wind, ice, or hailstorm

Fencing

- Fencing material is galvanized chain link and appropriate gauge wire for specified use
- Fencing material is properly secured to support rails
- Support rails are properly connected and straight
- Fencing is free of holes and protrusions
- Fabric is straight and free of bending and sagging
- Gates and latches are operational

Restrooms/Portable Toilets

- Toilets are clean, sanitary, and properly stocked with paper products
- Lights and ventilation systems are operational
- Toilets, stall doors, and hand air dryers are operational
- Buildings and enclosures are free of graffiti
- Doors are properly marked for visitors
- Restrooms have clean trash receptacles
- All doors and locks are operational
- Restrooms/portable toilets comply with ADA requirements

- All restrooms stocked with hand sanitizer

Playgrounds

Play Equipment

- Equipment and surrounding play areas meet ASTM International and National Playground Safety Institute (NPSI) standards
- Play equipment and hardware is intact
- Play equipment is free of graffiti
- Age appropriateness for equipment is noted with proper signage
- Regular inspection and repair program is in place and enforced

Surfacing

- Fall surface is clean, level, and free of debris
- Fall surface meets ASTM and NPSI standards
- Fall surface is well drained
- Rubber cushion surfaces are free of holes and tears
- Rubber cushion surfaces are secure to base material and curbing

Borders

- Playground borders are well defined and intact
- Playground borders meet ASTM and NPSI standards

General

- Slides and climbing devices are properly anchored
- All moving parts are properly lubricated and functioning as intended
- S-hooks and swing seats are in good operating condition
- Damaged or under-repair equipment is removed or properly marked and isolated from public use until repaired
- Playgrounds should adhere to ADA standards

Picnic Areas and Shelters

General

- Access to facilities complies with ADA
- Shelters are clean, sanitary, and free of graffiti
- Lights and electrical plugs are operational and comply with appropriate building codes
- Vegetation around structure is trimmed back to reduce hazards and does not impede entry and egress
- Grounds around structure are mowed, trimmed, and free of litter, debris, and hazards
- Shelters are structurally sound, clean, painted, have no rotted lumber or rusted metal, and have no loose siding or shingles
- Water fountains and hose bibs (if provided) are operational
- Signage and rules and regulations information are posted in a noticeable location

Tables

- Tables are clean, free of dust, mildew, and graffiti
- Table hardware is intact
- Table frames are intact, and slats are properly secured
- Table seats and tops are smooth with no protrusions and have no exposed sharp edges or pointed corners

Grills

- Grills are operational and free of rust and metal deterioration
- Grills are clean and free of grease buildup
- Grill racks are operational and secure, and grills are properly anchored to reduce hazard and theft

Trash Receptacles

- Receptacles are clean, free of odors, and have liners in place
- Receptacles are painted, free of damaged or missing parts, and properly anchored
- Area around receptacles is clean and free of trash and debris

Tennis Courts

Surfacing

- Surface is smooth, level, and well drained with no standing water
- Surface is free of large cracks, holes, and trip hazards
- Surface is painted and striped in accordance with U.S. Tennis Association court specifications and for pickleball where appropriate
- Worn painted surfaces do not exceed 30% of total court surface
- Surface is free of litter, debris, gravel, and graffiti

Nets

- Nets and wind screens are free of tears and frays
- Nets are properly installed and secured to support poles
- Nets have center stripes installed at the regulated height and are anchored to the court
- Support poles have hardware intact and are properly anchored and installed
- Wind screens are properly installed and secured to fencing

Fencing

- Fencing is galvanized chain link and is the appropriate gauge wire for specified use
- Fencing material is properly secured to support rails
- Support rails are properly secured and straight
- Fencing is free of holes, protrusions, and catch points
- Fabric is straight and free of bending or sagging
- Gates and latches are operational
- Windscreens are tightly secured and free of tears and holes

Outdoor Basketball Courts

Surfacing

- Surface is smooth, level, well drained, and free of standing water
- Surface is free of large cracks, holes, and tripping hazards
- Surface is painted and striped per court specifications
- Surface is free of litter, debris, gravel, and graffiti

Goals and Backboards

- Goals and backboards are level with hardware intact
- Goals and backboards are painted
- Nets are properly hung and free of tears and fraying
- Support poles are secure in ground and straight

Ponds and Lakes

Water

- Aerators, if provided, are operational
- Pond surface is at least 90% free of vegetation
- Water area is free of trash and debris
- Bank areas are smooth and free of washouts and erosion; riprap in place where needed
- Ponds and lakes, where appropriate, are stocked with appropriate species of fish
- Inlet and outlet structures are operational
- Appropriate and seasonal rules and regulations signage is in place at noticeable locations

Fishing Piers and Decks

- Planks are intact, smooth, structurally sound, free of splinters, and have no cracks greater than 0.25 inches
- Nails, bolts, and screws are flush with surface
- Planks are level with no excessive warping
- Handrails are present and structurally sound
- Piers and decks comply with ADA requirements
- Trash receptacles are provided nearby

Benches

- Hardware is intact and structurally sound
- Nails, bolts, or screws are flush with surface
- Seats and backing are smooth with no protrusions, have no sharp edges or pointed corners, and are structurally sound
- Benches are secured in ground and properly installed

Decks

- Planks are intact, smooth, structurally sound, free of splinters, and have no cracks greater than 0.25 inches
- Nails, bolts, and screws are flush with surface
- Planks are level with no excessive warping