



# Integrated Infrastructure Services

Infrastructure Planning and Design / Infrastructure Delivery

Edmonton

## Capital Project Planning and Design

Processes and Resources

### Cost Benefit Analysis and Cost Drivers

on Comparative Capital Projects

Executive Committee  
November 27, 2024

IIS02537/IIS02538

**IIS02538**  
**Capital Project Planning and Design**  
**Introduction**



Integrated Infrastructure Services  
Infrastructure Planning and Design

**Capital Project Planning and Design**  
Processes and Resources

Executive Committee  
November 27, 2024

IIS02538

**At the June 11, 2024, City Council meeting, the following motion was passed:**

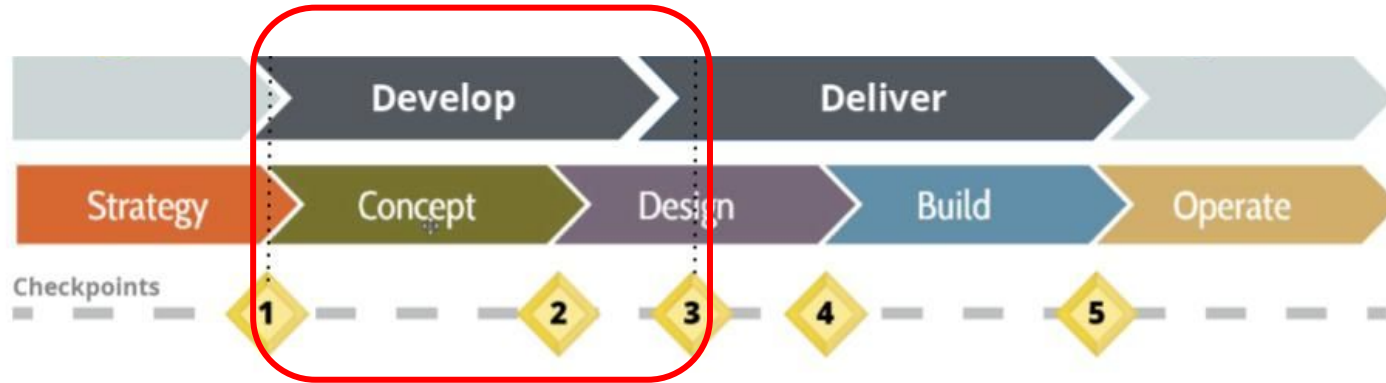
That Administration provide a report that includes the following:

1. A list of all projects in the planning and design phase (either underway or complete) where capital funds have not yet been committed for project delivery.
2. A general overview of a typical project governance structure, including references to the type of services and resources used to support the planning and design, and delivery of a project.
3. Available metrics and trends of the typical resources (cost and schedule) required to support the planning and design services required to progress a project through each of the PDDM checkpoints (1-3) in relation to the overall total project costs, including any available information relating to the cost drivers for these phases (i.e. public engagement, policies, etc.).
4. A general outline or typical cost breakdown of a facility and/or transportation capital project, estimate by % of construction value, during the planning and design phase, including but not limited to:
  - a. Internal Costs (Project Management, Public Engagement, Communication, Finance, Procurement, Legal, Design Services, Engineering Services, Land, etc.)
  - b. External Costs (Contractors, Material Vendors, Architects, Engineering Services, etc.)

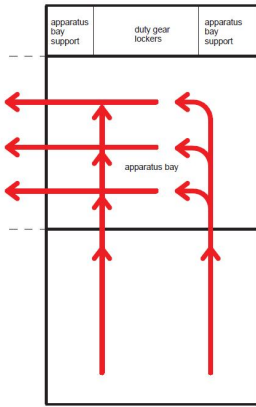
## Overview

- Capital Project Governance Policy C591 established the administrative framework for project development and delivery
- The policy commits to planning and design work to support informed decision making
- Benefits:
  - Design at an early stage results in a higher degree of accuracy in budget estimates and schedules
  - Moving the approval point further along the project development allows greater integration with strategy, operations and alignment of outcomes.

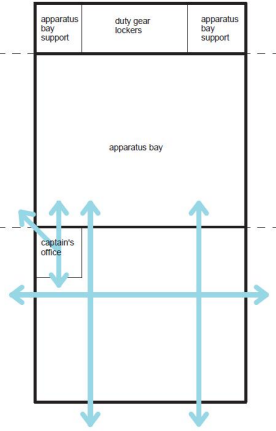
# Planning and Design Process



- 1 Project Initiation
- 2 Authorization for Design Expenditure
- 3 Approval for Capital Budget

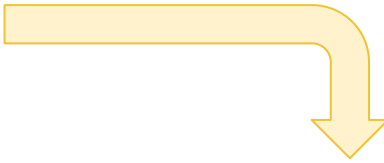
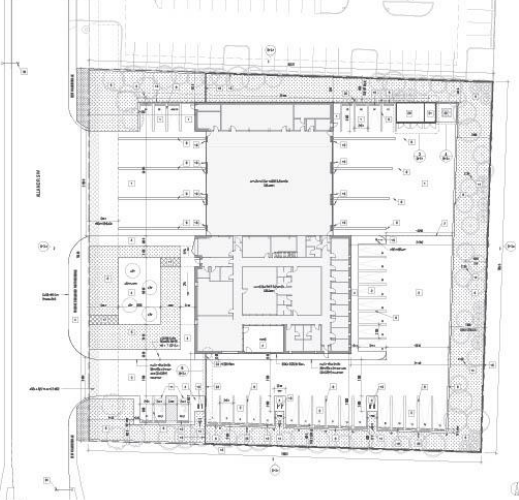


RAMP TIME



VISUAL CONTINUITY

- 1. Apparatus Bay Support
- 2. Duty Gear Lockers
- 3. Apparatus Bay
- 4. Captain's Office
- 5. Support Area
- 6. Restroom
- 7. Storage
- 8. Office
- 9. Conference Room
- 10. Reception
- 11. Break Room
- 12. Training Room
- 13. Maintenance
- 14. Parking
- 15. Entrance
- 16. Exit
- 17. Stairwell
- 18. Elevator
- 19. Utility Room
- 20. Mechanical Room
- 21. Electrical Room
- 22. Storage Room
- 23. Office
- 24. Conference Room
- 25. Reception
- 26. Break Room
- 27. Training Room
- 28. Maintenance
- 29. Parking
- 30. Entrance
- 31. Exit
- 32. Stairwell
- 33. Elevator
- 34. Utility Room
- 35. Mechanical Room
- 36. Electrical Room
- 37. Storage Room
- 38. Office
- 39. Conference Room
- 40. Reception
- 41. Break Room
- 42. Training Room
- 43. Maintenance
- 44. Parking
- 45. Entrance
- 46. Exit
- 47. Stairwell
- 48. Elevator
- 49. Utility Room
- 50. Mechanical Room
- 51. Electrical Room
- 52. Storage Room
- 53. Office
- 54. Conference Room
- 55. Reception
- 56. Break Room
- 57. Training Room
- 58. Maintenance
- 59. Parking
- 60. Entrance
- 61. Exit
- 62. Stairwell
- 63. Elevator
- 64. Utility Room
- 65. Mechanical Room
- 66. Electrical Room
- 67. Storage Room
- 68. Office
- 69. Conference Room
- 70. Reception
- 71. Break Room
- 72. Training Room
- 73. Maintenance
- 74. Parking
- 75. Entrance
- 76. Exit
- 77. Stairwell
- 78. Elevator
- 79. Utility Room
- 80. Mechanical Room
- 81. Electrical Room
- 82. Storage Room
- 83. Office
- 84. Conference Room
- 85. Reception
- 86. Break Room
- 87. Training Room
- 88. Maintenance
- 89. Parking
- 90. Entrance
- 91. Exit
- 92. Stairwell
- 93. Elevator
- 94. Utility Room
- 95. Mechanical Room
- 96. Electrical Room
- 97. Storage Room
- 98. Office
- 99. Conference Room
- 100. Reception
- 101. Break Room
- 102. Training Room
- 103. Maintenance
- 104. Parking
- 105. Entrance
- 106. Exit
- 107. Stairwell
- 108. Elevator
- 109. Utility Room
- 110. Mechanical Room
- 111. Electrical Room
- 112. Storage Room
- 113. Office
- 114. Conference Room
- 115. Reception
- 116. Break Room
- 117. Training Room
- 118. Maintenance
- 119. Parking
- 120. Entrance
- 121. Exit
- 122. Stairwell
- 123. Elevator
- 124. Utility Room
- 125. Mechanical Room
- 126. Electrical Room
- 127. Storage Room
- 128. Office
- 129. Conference Room
- 130. Reception
- 131. Break Room
- 132. Training Room
- 133. Maintenance
- 134. Parking
- 135. Entrance
- 136. Exit
- 137. Stairwell
- 138. Elevator
- 139. Utility Room
- 140. Mechanical Room
- 141. Electrical Room
- 142. Storage Room
- 143. Office
- 144. Conference Room
- 145. Reception
- 146. Break Room
- 147. Training Room
- 148. Maintenance
- 149. Parking
- 150. Entrance
- 151. Exit
- 152. Stairwell
- 153. Elevator
- 154. Utility Room
- 155. Mechanical Room
- 156. Electrical Room
- 157. Storage Room
- 158. Office
- 159. Conference Room
- 160. Reception
- 161. Break Room
- 162. Training Room
- 163. Maintenance
- 164. Parking
- 165. Entrance
- 166. Exit
- 167. Stairwell
- 168. Elevator
- 169. Utility Room
- 170. Mechanical Room
- 171. Electrical Room
- 172. Storage Room
- 173. Office
- 174. Conference Room
- 175. Reception
- 176. Break Room
- 177. Training Room
- 178. Maintenance
- 179. Parking
- 180. Entrance
- 181. Exit
- 182. Stairwell
- 183. Elevator
- 184. Utility Room
- 185. Mechanical Room
- 186. Electrical Room
- 187. Storage Room
- 188. Office
- 189. Conference Room
- 190. Reception
- 191. Break Room
- 192. Training Room
- 193. Maintenance
- 194. Parking
- 195. Entrance
- 196. Exit
- 197. Stairwell
- 198. Elevator
- 199. Utility Room
- 200. Mechanical Room
- 201. Electrical Room
- 202. Storage Room
- 203. Office
- 204. Conference Room
- 205. Reception
- 206. Break Room
- 207. Training Room
- 208. Maintenance
- 209. Parking
- 210. Entrance
- 211. Exit
- 212. Stairwell
- 213. Elevator
- 214. Utility Room
- 215. Mechanical Room
- 216. Electrical Room
- 217. Storage Room
- 218. Office
- 219. Conference Room
- 220. Reception
- 221. Break Room
- 222. Training Room
- 223. Maintenance
- 224. Parking
- 225. Entrance
- 226. Exit
- 227. Stairwell
- 228. Elevator
- 229. Utility Room
- 230. Mechanical Room
- 231. Electrical Room
- 232. Storage Room
- 233. Office
- 234. Conference Room
- 235. Reception
- 236. Break Room
- 237. Training Room
- 238. Maintenance
- 239. Parking
- 240. Entrance
- 241. Exit
- 242. Stairwell
- 243. Elevator
- 244. Utility Room
- 245. Mechanical Room
- 246. Electrical Room
- 247. Storage Room
- 248. Office
- 249. Conference Room
- 250. Reception
- 251. Break Room
- 252. Training Room
- 253. Maintenance
- 254. Parking
- 255. Entrance
- 256. Exit
- 257. Stairwell
- 258. Elevator
- 259. Utility Room
- 260. Mechanical Room
- 261. Electrical Room
- 262. Storage Room
- 263. Office
- 264. Conference Room
- 265. Reception
- 266. Break Room
- 267. Training Room
- 268. Maintenance
- 269. Parking
- 270. Entrance
- 271. Exit
- 272. Stairwell
- 273. Elevator
- 274. Utility Room
- 275. Mechanical Room
- 276. Electrical Room
- 277. Storage Room
- 278. Office
- 279. Conference Room
- 280. Reception
- 281. Break Room
- 282. Training Room
- 283. Maintenance
- 284. Parking
- 285. Entrance
- 286. Exit
- 287. Stairwell
- 288. Elevator
- 289. Utility Room
- 290. Mechanical Room
- 291. Electrical Room
- 292. Storage Room
- 293. Office
- 294. Conference Room
- 295. Reception
- 296. Break Room
- 297. Training Room
- 298. Maintenance
- 299. Parking
- 300. Entrance
- 301. Exit
- 302. Stairwell
- 303. Elevator
- 304. Utility Room
- 305. Mechanical Room
- 306. Electrical Room
- 307. Storage Room
- 308. Office
- 309. Conference Room
- 310. Reception
- 311. Break Room
- 312. Training Room
- 313. Maintenance
- 314. Parking
- 315. Entrance
- 316. Exit
- 317. Stairwell
- 318. Elevator
- 319. Utility Room
- 320. Mechanical Room
- 321. Electrical Room
- 322. Storage Room
- 323. Office
- 324. Conference Room
- 325. Reception
- 326. Break Room
- 327. Training Room
- 328. Maintenance
- 329. Parking
- 330. Entrance
- 331. Exit
- 332. Stairwell
- 333. Elevator
- 334. Utility Room
- 335. Mechanical Room
- 336. Electrical Room
- 337. Storage Room
- 338. Office
- 339. Conference Room
- 340. Reception
- 341. Break Room
- 342. Training Room
- 343. Maintenance
- 344. Parking
- 345. Entrance
- 346. Exit
- 347. Stairwell
- 348. Elevator
- 349. Utility Room
- 350. Mechanical Room
- 351. Electrical Room
- 352. Storage Room
- 353. Office
- 354. Conference Room
- 355. Reception
- 356. Break Room
- 357. Training Room
- 358. Maintenance
- 359. Parking
- 360. Entrance
- 361. Exit
- 362. Stairwell
- 363. Elevator
- 364. Utility Room
- 365. Mechanical Room
- 366. Electrical Room
- 367. Storage Room
- 368. Office
- 369. Conference Room
- 370. Reception
- 371. Break Room
- 372. Training Room
- 373. Maintenance
- 374. Parking
- 375. Entrance
- 376. Exit
- 377. Stairwell
- 378. Elevator
- 379. Utility Room
- 380. Mechanical Room
- 381. Electrical Room
- 382. Storage Room
- 383. Office
- 384. Conference Room
- 385. Reception
- 386. Break Room
- 387. Training Room
- 388. Maintenance
- 389. Parking
- 390. Entrance
- 391. Exit
- 392. Stairwell
- 393. Elevator
- 394. Utility Room
- 395. Mechanical Room
- 396. Electrical Room
- 397. Storage Room
- 398. Office
- 399. Conference Room
- 400. Reception
- 401. Break Room
- 402. Training Room
- 403. Maintenance
- 404. Parking
- 405. Entrance
- 406. Exit
- 407. Stairwell
- 408. Elevator
- 409. Utility Room
- 410. Mechanical Room
- 411. Electrical Room
- 412. Storage Room
- 413. Office
- 414. Conference Room
- 415. Reception
- 416. Break Room
- 417. Training Room
- 418. Maintenance
- 419. Parking
- 420. Entrance
- 421. Exit
- 422. Stairwell
- 423. Elevator
- 424. Utility Room
- 425. Mechanical Room
- 426. Electrical Room
- 427. Storage Room
- 428. Office
- 429. Conference Room
- 430. Reception
- 431. Break Room
- 432. Training Room
- 433. Maintenance
- 434. Parking
- 435. Entrance
- 436. Exit
- 437. Stairwell
- 438. Elevator
- 439. Utility Room
- 440. Mechanical Room
- 441. Electrical Room
- 442. Storage Room
- 443. Office
- 444. Conference Room
- 445. Reception
- 446. Break Room
- 447. Training Room
- 448. Maintenance
- 449. Parking
- 450. Entrance
- 451. Exit
- 452. Stairwell
- 453. Elevator
- 454. Utility Room
- 455. Mechanical Room
- 456. Electrical Room
- 457. Storage Room
- 458. Office
- 459. Conference Room
- 460. Reception
- 461. Break Room
- 462. Training Room
- 463. Maintenance
- 464. Parking
- 465. Entrance
- 466. Exit
- 467. Stairwell
- 468. Elevator
- 469. Utility Room
- 470. Mechanical Room
- 471. Electrical Room
- 472. Storage Room
- 473. Office
- 474. Conference Room
- 475. Reception
- 476. Break Room
- 477. Training Room
- 478. Maintenance
- 479. Parking
- 480. Entrance
- 481. Exit
- 482. Stairwell
- 483. Elevator
- 484. Utility Room
- 485. Mechanical Room
- 486. Electrical Room
- 487. Storage Room
- 488. Office
- 489. Conference Room
- 490. Reception
- 491. Break Room
- 492. Training Room
- 493. Maintenance
- 494. Parking
- 495. Entrance
- 496. Exit
- 497. Stairwell
- 498. Elevator
- 499. Utility Room
- 500. Mechanical Room
- 501. Electrical Room
- 502. Storage Room
- 503. Office
- 504. Conference Room
- 505. Reception
- 506. Break Room
- 507. Training Room
- 508. Maintenance
- 509. Parking
- 510. Entrance
- 511. Exit
- 512. Stairwell
- 513. Elevator
- 514. Utility Room
- 515. Mechanical Room
- 516. Electrical Room
- 517. Storage Room
- 518. Office
- 519. Conference Room
- 520. Reception
- 521. Break Room
- 522. Training Room
- 523. Maintenance
- 524. Parking
- 525. Entrance
- 526. Exit
- 527. Stairwell
- 528. Elevator
- 529. Utility Room
- 530. Mechanical Room
- 531. Electrical Room
- 532. Storage Room
- 533. Office
- 534. Conference Room
- 535. Reception
- 536. Break Room
- 537. Training Room
- 538. Maintenance
- 539. Parking
- 540. Entrance
- 541. Exit
- 542. Stairwell
- 543. Elevator
- 544. Utility Room
- 545. Mechanical Room
- 546. Electrical Room
- 547. Storage Room
- 548. Office
- 549. Conference Room
- 550. Reception
- 551. Break Room
- 552. Training Room
- 553. Maintenance
- 554. Parking
- 555. Entrance
- 556. Exit
- 557. Stairwell
- 558. Elevator
- 559. Utility Room
- 560. Mechanical Room
- 561. Electrical Room
- 562. Storage Room
- 563. Office
- 564. Conference Room
- 565. Reception
- 566. Break Room
- 567. Training Room
- 568. Maintenance
- 569. Parking
- 570. Entrance
- 571. Exit
- 572. Stairwell
- 573. Elevator
- 574. Utility Room
- 575. Mechanical Room
- 576. Electrical Room
- 577. Storage Room
- 578. Office
- 579. Conference Room
- 580. Reception
- 581. Break Room
- 582. Training Room
- 583. Maintenance
- 584. Parking
- 585. Entrance
- 586. Exit
- 587. Stairwell
- 588. Elevator
- 589. Utility Room
- 590. Mechanical Room
- 591. Electrical Room
- 592. Storage Room
- 593. Office
- 594. Conference Room
- 595. Reception
- 596. Break Room
- 597. Training Room
- 598. Maintenance
- 599. Parking
- 600. Entrance
- 601. Exit
- 602. Stairwell
- 603. Elevator
- 604. Utility Room
- 605. Mechanical Room
- 606. Electrical Room
- 607. Storage Room
- 608. Office
- 609. Conference Room
- 610. Reception
- 611. Break Room
- 612. Training Room
- 613. Maintenance
- 614. Parking
- 615. Entrance
- 616. Exit
- 617. Stairwell
- 618. Elevator
- 619. Utility Room
- 620. Mechanical Room
- 621. Electrical Room
- 622. Storage Room
- 623. Office
- 624. Conference Room
- 625. Reception
- 626. Break Room
- 627. Training Room
- 628. Maintenance
- 629. Parking
- 630. Entrance
- 631. Exit
- 632. Stairwell
- 633. Elevator
- 634. Utility Room
- 635. Mechanical Room
- 636. Electrical Room
- 637. Storage Room
- 638. Office
- 639. Conference Room
- 640. Reception
- 641. Break Room
- 642. Training Room
- 643. Maintenance
- 644. Parking
- 645. Entrance
- 646. Exit
- 647. Stairwell
- 648. Elevator
- 649. Utility Room
- 650. Mechanical Room
- 651. Electrical Room
- 652. Storage Room
- 653. Office
- 654. Conference Room
- 655. Reception
- 656. Break Room
- 657. Training Room
- 658. Maintenance
- 659. Parking
- 660. Entrance
- 661. Exit
- 662. Stairwell
- 663. Elevator
- 664. Utility Room
- 665. Mechanical Room
- 666. Electrical Room
- 667. Storage Room
- 668. Office
- 669. Conference Room
- 670. Reception
- 671. Break Room
- 672. Training Room
- 673. Maintenance
- 674. Parking
- 675. Entrance
- 676. Exit
- 677. Stairwell
- 678. Elevator
- 679. Utility Room
- 680. Mechanical Room
- 681. Electrical Room
- 682. Storage Room
- 683. Office
- 684. Conference Room
- 685. Reception
- 686. Break Room
- 687. Training Room
- 688. Maintenance
- 689. Parking
- 690. Entrance
- 691. Exit
- 692. Stairwell
- 693. Elevator
- 694. Utility Room
- 695. Mechanical Room
- 696. Electrical Room
- 697. Storage Room
- 698. Office
- 699. Conference Room
- 700. Reception
- 701. Break Room
- 702. Training Room
- 703. Maintenance
- 704. Parking
- 705. Entrance
- 706. Exit
- 707. Stairwell
- 708. Elevator
- 709. Utility Room
- 710. Mechanical Room
- 711. Electrical Room
- 712. Storage Room
- 713. Office
- 714. Conference Room
- 715. Reception
- 716. Break Room
- 717. Training Room
- 718. Maintenance
- 719. Parking
- 720. Entrance
- 721. Exit
- 722. Stairwell
- 723. Elevator
- 724. Utility Room
- 725. Mechanical Room
- 726. Electrical Room
- 727. Storage Room
- 728. Office
- 729. Conference Room
- 730. Reception
- 731. Break Room
- 732. Training Room
- 733. Maintenance
- 734. Parking
- 735. Entrance
- 736. Exit
- 737. Stairwell
- 738. Elevator
- 739. Utility Room
- 740. Mechanical Room
- 741. Electrical Room
- 742. Storage Room
- 743. Office
- 744. Conference Room
- 745. Reception
- 746. Break Room
- 747. Training Room
- 748. Maintenance
- 749. Parking
- 750. Entrance
- 751. Exit
- 752. Stairwell
- 753. Elevator
- 754. Utility Room
- 755. Mechanical Room
- 756. Electrical Room
- 757. Storage Room
- 758. Office
- 759. Conference Room
- 760. Reception
- 761. Break Room
- 762. Training Room
- 763. Maintenance
- 764. Parking
- 765. Entrance
- 766. Exit
- 767. Stairwell
- 768. Elevator
- 769. Utility Room
- 770. Mechanical Room
- 771. Electrical Room
- 772. Storage Room
- 773. Office
- 774. Conference Room
- 775. Reception
- 776. Break Room
- 777. Training Room
- 778. Maintenance
- 779. Parking
- 780. Entrance
- 781. Exit
- 782. Stairwell
- 783. Elevator
- 784. Utility Room
- 785. Mechanical Room
- 786. Electrical Room
- 787. Storage Room
- 788. Office
- 789. Conference Room
- 790. Reception
- 791. Break Room
- 792. Training Room
- 793. Maintenance
- 794. Parking
- 795. Entrance
- 796. Exit
- 797. Stairwell
- 798. Elevator
- 799. Utility Room
- 800. Mechanical Room
- 801. Electrical Room
- 802. Storage Room
- 803. Office
- 804. Conference Room
- 805. Reception
- 806. Break Room
- 807. Training Room
- 808. Maintenance
- 809. Parking
- 810. Entrance
- 811. Exit
- 812. Stairwell
- 813. Elevator
- 814. Utility Room
- 815. Mechanical Room
- 816. Electrical Room
- 817. Storage Room
- 818. Office
- 819. Conference Room
- 820. Reception
- 821. Break Room
- 822. Training Room
- 823. Maintenance
- 824. Parking
- 825. Entrance
- 826. Exit
- 827. Stairwell
- 828. Elevator
- 829. Utility Room
- 830. Mechanical Room
- 831. Electrical Room
- 832. Storage Room
- 833. Office
- 834. Conference Room
- 835. Reception
- 836. Break Room
- 837. Training Room
- 838. Maintenance
- 839. Parking
- 840. Entrance
- 841. Exit
- 842. Stairwell
- 843. Elevator
- 844. Utility Room
- 845. Mechanical Room
- 846. Electrical Room
- 847. Storage Room
- 848. Office
- 849. Conference Room
- 850. Reception
- 851. Break Room
- 852. Training Room
- 853. Maintenance
- 854. Parking
- 855. Entrance
- 856. Exit
- 857. Stairwell
- 858. Elevator
- 859. Utility Room
- 860. Mechanical Room
- 861. Electrical Room
- 862. Storage Room
- 863. Office
- 864. Conference Room
- 865. Reception
- 866. Break Room
- 867. Training Room
- 868. Maintenance
- 869. Parking
- 870. Entrance
- 871. Exit
- 872. Stairwell
- 873. Elevator
- 874. Utility Room
- 875. Mechanical Room
- 876. Electrical Room
- 877. Storage Room
- 878. Office
- 879. Conference Room
- 880. Reception
- 881. Break Room
- 882. Training Room
- 883. Maintenance
- 884. Parking
- 885. Entrance
- 886. Exit
- 887. Stairwell
- 888. Elevator
- 889. Utility Room
- 890. Mechanical Room
- 891. Electrical Room
- 892. Storage Room
- 893. Office
- 894. Conference Room
- 895. Reception
- 896. Break Room
- 897. Training Room
- 898. Maintenance
- 899. Parking
- 900. Entrance
- 901. Exit
- 902. Stairwell
- 903. Elevator
- 904. Utility Room
- 905. Mechanical Room
- 906. Electrical Room
- 907. Storage Room
- 908. Office
- 909. Conference Room
- 910. Reception
- 911. Break Room
- 912. Training Room
- 913. Maintenance
- 914. Parking
- 915. Entrance
- 916. Exit
- 917. Stairwell
- 918. Elevator
- 919. Utility Room
- 920. Mechanical Room
- 921. Electrical Room
- 922. Storage Room
- 923. Office
- 924. Conference Room
- 925. Reception
- 926. Break Room
- 927. Training Room
- 928. Maintenance
- 929. Parking
- 930. Entrance
- 931. Exit
- 932. Stairwell
- 933. Elevator
- 934. Utility Room
- 935. Mechanical Room
- 936. Electrical Room
- 937. Storage Room
- 938. Office
- 939. Conference Room
- 940. Reception
- 941. Break Room
- 942. Training Room
- 943. Maintenance
- 944. Parking
- 945. Entrance
- 946. Exit
- 947. Stairwell
- 948. Elevator
- 949. Utility Room
- 950. Mechanical Room
- 951. Electrical Room
- 952. Storage Room
- 953. Office
- 954. Conference Room
- 955. Reception
- 956. Break Room
- 957. Training Room
- 958. Maintenance
- 959. Parking
- 960. Entrance
- 961. Exit
- 962. Stairwell
- 963. Elevator
- 964. Utility Room
- 965. Mechanical Room
- 966. Electrical Room
- 967. Storage Room
- 968. Office
- 969. Conference Room
- 970. Reception
- 971. Break Room
- 972. Training Room
- 973. Maintenance
- 974. Parking
- 975. Entrance
- 976. Exit
- 977. Stairwell
- 978. Elevator
- 979. Utility Room
- 980. Mechanical Room
- 981. Electrical Room
- 982. Storage Room
- 983. Office
- 984. Conference Room
- 985. Reception
- 986. Break Room
- 987. Training Room
- 988. Maintenance
- 989. Parking
- 990. Entrance
- 991. Exit
- 992. Stairwell
- 993. Elevator
- 994. Utility Room
- 995. Mechanical Room
- 996. Electrical Room
- 997. Storage Room
- 998. Office
- 999. Conference Room
- 1000. Reception



# Performance Measure and Industry Benchmark

## Performance Measure

- An assessment of over 350 capital infrastructure projects between 2019 and 2023 was completed, measuring the performance of planning and design.
- Analysis concluded that:
  - 90% of projects fall within the acceptable budget tolerance.
  - 77% of projects were completed under budget.

## Industry Benchmark

- The project management effort for all phases of a project represents between 2% and 12% of the overall project cost.
- Industry benchmark average 6% but can vary from 1% to 17%.



# Cost of Project Development

## Project Development

- The cost of the planning and design phase in relation to the overall project cost ranges from 3% to 8%, depending on the asset.
- On average, the cost of planning and design across all assets is approximately 5% of the overall project cost.

## Risk Management

- Reduce the risk of underestimating costs and schedule overruns during delivery.
- Enhanced transparency and accountability.
- Improved outcomes with better alignment to City policies and strategies.
- Provide efficiencies in long term planning.
- Enhanced stakeholder and public satisfaction

## Growth Projects Funded for Design (Attachment 6)

As of November 2024, the following active growth projects are funded for planning and design without delivery funding identified.

- Mass Transit Routes B1 & B2
- River Crossings Redevelopment (Indigenous Park)
- School Site Developments (Emergent Items)

## Conclusion

- Edmonton's planning and design practices are in alignment with industry best practices
- Public infrastructure delivery is different than private, requiring more checks and balances
- Administration takes a balanced approach to ensure that risks to the City are mitigated in terms of cost, schedule and reputation

**IIS02537**  
**Cost Benefit Analysis and Cost Drivers on**  
**Comparative Capital Projects**  
**Introduction**



Integrated Infrastructure Services  
Infrastructure Delivery

Edmonton

# Cost Benefit Analysis and Cost Drivers on Comparative Capital Projects

Executive Committee  
November 27, 2024

IIS02537

**At the June 11/12 City Council meeting, the following motion was passed:**

“That Administration provide a report with a cost benefit analysis and cost drivers that influence comparative capital projects including Codes, Policies, Bylaws, Program or other factors, with a focus on Facilities and Renewal Projects; including a direct cost breakdown comparison of current fire hall and recreation centre projects completed in Edmonton and within regional municipalities.”

Due: 2024 Fall SCBA

# List of Projects

Project	Municipality	Project Status
<b><u>Fire Stations</u></b>		
Nisku Fire Station No. 9	Leduc County	In Operation
Windermere Fire Station No. 31	Edmonton	In Operation
Pilot Sound Fire Station No. 30	Edmonton	In Operation
St. Albert Fire Station No. 1	St. Albert	In Operation
<b><u>Recreation Centres</u></b>		
Peter Hemingway Pool Rehabilitation	Edmonton	Construction
Fountain Park Pool Rehabilitation	St. Albert	In Operation
Rollie Miles Recreation Centre	Edmonton	Schematic Design
Ricochet Recreation Centre	Drayton Valley	In Operation
Calgary Recreation Centre	Calgary	In Operation
Lewis Farms Recreation Centre	Edmonton	Construction
The Meadows Recreation Centre	Edmonton	In Operation

# Summary of Key Findings



1. Timing and Market Escalation
2. Sustainability and Climate Resilience Goals
3. Program and Design Scope
4. Complexity of Policies, Bylaws, Standards and Regulatory Responses
5. Business Partner Involvement



# 1. Timing and Market Escalation



- Construction projects are susceptible to economic fluctuations.
- Unexpected events trigger cost escalations due to supply chain disruptions, labor shortages, and inflation.
- The Building Construction Price Index (BCPI) highlights the impact of such events, with a surge in 2021-2022.
- Projects with longer timelines are more vulnerable to market volatilities.
- Normalizing costs to a single, consistent year ensures fair analysis.  
Example: Post-pandemic projects can be up to 30% more expensive.

## 2. Sustainability and Climate Resilience Goals



- Edmonton's sustainability goals require new, complex technologies and materials.
- Payback periods for green investments can range from 10 to 25+ years.
- Upfront costs can be offset by long-term savings.
- Capital investments in sustainability assume a payback in operations and maintenance.

### 3. Program and Design Scope



- Design scope impacts construction costs.
- Specialized spaces add to overall cost.
- Facilities have unique program requirements.
- Recreation centers may incorporate additional services.
- Project budgets may include other tangible costs.

## 4. Complexity of Policies, Bylaws, Standards and Regulatory Responses



- Edmonton's comprehensive bylaws and standards ensure high-quality construction and public safety.
- This complexity can lead to higher administrative, legal, and design costs.
- Design review under Bylaw 20673 adds complexity and potential time and cost implications.
- These regulations reflect Edmonton's unique values, priorities, and expectations.

## 5. Business Partner Involvement



- Partnering with business ensures design needs are met and future operating costs are considered.
- Collaboration may lead to higher upfront design costs, but it enhances long-term value through user input.
- Business partner involvement mitigates risk and ensures the facility meets operational needs, avoiding costly rework.

## Conclusion

- Total Cost of Ownership: Function of both Operating and Capital costs over the lifecycle
- Fair and Equitable Comparisons: Timing, inflation, scope, and functional program.
- Cost Drivers: Combination of both Internal factors (policies, bylaws) and external factors (building codes, supply chain).
- Policy Environment: Primary domain to influence capital costs, governing administration and scoping.
- Market Response: No cost differential between Edmonton and regional public owners for similar projects.
- Client of Choice: City's market opportunities are attractive to industry

**Thank you. Questions?**