

EXHIBIT B

CONTRACTORS PROPOSAL WITH PROPOSAL AMENDMENTS AND COMPENSATION *Including deliverables and payment schedule*

AMENDMENTS TO CONNEXIONZ PROPOSAL

- System Requirements
 - Automatic Vehicle Location (AVL) System
 - Vehicle Tracking Functional Requirements
 - Automated Voice Annunciation System (AVA)
 - In-Vehicle Hardware Requirements
 - In-Vehicle LED Signage
 - APC Performance Requirements
 - Text Messaging
 - Transfer Protection
 - Route Monitoring
- Cost Proposal Form and Milestone Schedule
- Project Implementation and Completion Timeline
- End-User License Agreement

Addendum to CNX RDP Response Clarifications and Revised Cost Proposal dated 21-Nov-2023

The following Addendum represents the discussion and clarifications on RFP Response during the meeting between CNX and Yakima Team in November 15th2023.

Section	Notes
2 -Automatic Vehicle Location (AVL) System	<p>Yakima – decided to move forward with the Stop Survey. There are around 800 stops to be surveyed. The Cost Proposal will be updated accordingly.</p> <p>CNX – if Yakima provides a driver, then we can survey about 150 stops per day, so the expected work effort would be 6 days – @ \$550 (at the discounted rate)</p> <p>CNX – the system can show route patterns, which we assumed cover RSA corridors and non-display patterns for visible routes.</p> <p>Yakima –RSA corridors and no-display patterns are a hangover from some unknown historical influence, and that what CNX has will be sufficient.</p> <p>CNX – System can only set up visible pick-up and drop-off stops or “candidate” stops for when a route passes a stop it doesn’t use. System can set up stops on a route to either announce or not announce in the system, which means the requirement can be met.</p> <p>Yakima –the main purpose of the requirement is that they don’t want to announce all stops on a route, so if we can do this, then we meet the intent of the requirement.</p>
3 Vehicle Tracking Functional Requirements	<p>CNX –can “manually” update the GPS location reporting rate on individual vehicles, although there is no “end user” ability to do this, so this would need to be raised under a support request and completed by the CNX tech team.</p> <p>Yakima – this approach works for Yakima</p>
1 Automated Voice Annunciation System (AVA)	<p>CNX – System can only do automatic text-to-speech announcements at stops or set up a stop-level playlist to make announcements on the infotainment system for an upcoming stop on a trip – no other non-stop announcements are possible.</p> <p>Yakima - no issues with this approach, as it is how the system works now.</p> <p>CNX – System does not have this functionality available, although it is on the roadmap, but does not have a confirmed delivery date.</p> <p>Yakima - no issues with this approach, as it is how the system works now.</p> <p>CNX – can manually create customer dictionaries, although there is no “end user” ability to do this, so this would need to be raised under a support request and completed by the CNX tech team.</p>

	<p>Yakima – no issue with this approach.</p> <p>CNX – System can only have English OR Spanish text-to-speech announcements, and there is no facility to have both English and Spanish TTS announcements together.</p> <p>The only way we could perform Spanish announcements for system setup for English TTS announcements is through the infotainment.</p> <p>Yakima – no issues with this approach</p> <p>CNX – drivers can use the microphone but cannot do vehicle operator-initiated display announcements. CNX System cannot do “time-based” announcements, that aren’t linked to a stop and a schedule.</p> <p>Yakima – no issue with this, as it mirrors their current system.</p>
2 In-Vehicle Hardware Requirements	<p>CNX - have included ambient noise sensors as an option but have not provisioned for the equipment in the project budget, as this has never been required by other customers.</p> <p>Yakima –this isn’t an issue</p>
3 In-Vehicle LED Signage	<p>CNX - System cannot show the date and time on an LED, as we originally indicated.</p> <p>Yakima – not having the date and time on the LED is fine</p> <p>CNX – System can only do automatic text-to-speech announcements at stops or set up a stop-level playlist to make announcements on the infotainment system for an upcoming stop on a trip – no other non-stop announcements are possible.</p> <p>Yakima –that is fine</p>
B APC Performance Requirements	<p>CNX –does not link APC counts with a logged-in MDT by design, as it could be possible an MDT isn’t working for some reason, which would then result in no APC counts.</p> <p>What we do have is a workaround for this scenario where Yakima could assign the trip to the “replacement” bus only once the passengers are onboard, which means that the riders would only be counted once in the APC “route” report – they would still be counted in a temporal report, but not associated to a route.</p> <p>Yakima – this is fine</p>
10 Text Messaging	<p>CNX – System can only cater for driver to dispatch and dispatch to driver messages and cannot cater dispatcher to dispatcher messages.</p> <p>Yakima – currently has this, but no one uses it, so this is not a problem, as it is faster to call if needed.</p>

11 Transfer Protection	<p>CNX – there is Connection Protection system mentioned that requires an active third-party system to trigger an external API to request a bus to hold based on a set of external business rules, which we don't have in this instance. In our experience at other sites, drivers call dispatchers and ask them to call another bus to get them to hold, which is what we recommend in this instance.</p> <p>Yakima –currently uses radio for this purpose, so the proposed approach is fine.</p>
18 Route Monitoring	<p>CNX – has a Headway function on the roadmap.</p> <p>Yakima –this is fine.</p>

Connexionz Amended
COST PROPOSAL FORM
RFP #12324P
Onboard Integrated Technology System for Yakima Transit

The CONTRACTOR, in accordance with the RFP Specifications for providing an Onboard Information Technology System has carefully examined the project requirements, the scope of the proposed work, and being familiar with all the conditions surrounding the project, hereby propose to perform all work required for a complete project for the amount listed below.

The amounts listed below are the amounts for a complete project and will be scored according to Section VII. Evaluation and Contract Award. Any Optional benefits that might enhance the system maybe added on a separate sheet and uploaded under Tab 8 titled Cost Proposal but will not be considered as part of the completed project as required in the specifications or in the evaluation scoring.

	ITEMIZED Project Pricing for EXISTING BUSES	AMOUNT	X	QUANTITY OF BUSES	TOTAL
1a	Hardware Per Bus without new interior signs (minus modems, cameras, antennas, exterior signs)	\$ 7,135.08		24	\$ 171,242.00
1b	Hardware Per Bus with new interior signs (minus modems, cameras, antennas, exterior signs)	\$ 7,825.08		24	\$ 187,802.00
2	Software License	\$ 2,385.73		24	\$ 57,257.50
3	Installation Cost	\$ 7,283.72		24	\$ 174,809.20
4	Travel Costs	48,142.50		1	\$ 48,142.50
5	Stop Survey	\$ 3,300.00		1	\$ 3,300.00
6	One Year Software and Support Fee	\$ -		1	\$ -
DISCOUNT					\$ -
TOTAL PROJECT COST Without Interior Signs					\$ 454,751.20
TOTAL PROJECT COST With Interior Signs					\$ 471,311.20

	ITEMIZED Project Pricing for NEW BUSES (up to 6)	AMOUNT	X	QUANTITY OF BUSES	TOTAL
1	Hardware Per Bus without new interior signs (minus modems, cameras, antennas, exterior signs)	\$ 7,135.08		1	\$ 7,135.08
	Hardware Per Bus with new interior signs (minus modems, cameras, antennas, exterior signs)	\$ 7,825.08		1	\$ 7,825.08
2	Software License	\$ 2,385.73		1	\$ 2,385.73
3	Installation Cost	\$ 2,505.00		1	\$ 2,505.00
4	Travel Costs	\$ 6,662.30		1	\$ 6,662.30
5	One Year Software and Support Fee	\$0.00		1	\$ -

6 OPTIONAL - Real Time Informational Signs	\$ 2,572.50	1	\$ 2,572.50
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SOFTWARE AND SUPPORT	AMOUNT	X	QUANTITY OF BUSES	TOTAL
Year 2 - Software License and Support Fee	\$ 2,416.52		1	\$ 57,996.38
Year 3 - Software License and Support Fee	\$ 2,537.34		1	\$ 60,896.19
Year 4 - Software License and Support Fee	\$ 2,664.21		1	\$ 63,941.00
Year 5 - Software License and Support Fee	\$ 2,797.42		1	\$ 67,138.05
TOTAL WITHOUT OPTIONAL INTERIOR SIGNS (includes initial project cost plus Five Years Support)				\$ 704,722.83
LESS DISCOUNT	30%			\$ 213,132.83
TOTAL WITHOUT OPTIONAL INTERIOR SIGNS (includes initial project cost plus Five Years Support)				\$ 491,590.00

COST PROPOSAL FORM PG 2 OF 2

Hourly Rates for Offsite Services	Hourly Rate
Offsite / Remote - Program Manager	\$ 175.00
Offsite / Remote - Technical Specialist	\$ 110.00
Offsite / Remote - Other	\$ 175.00
<hr style="width: 30%; margin-left: 0;"/>	
Blended Hourly Rate	\$ 151.01

On-Site Rate

The "blended hourly rate" for post-installation services shall be a single hourly rate encompassing all personnel classifications that may be required for completion of any given post-installation task under the resulting contract. This blended hourly rate shall be a fully loaded rate to include, but not be limited to, all salary, benefits, overhead, profit, and local travel costs (defined as travel within Yakima County, WA).

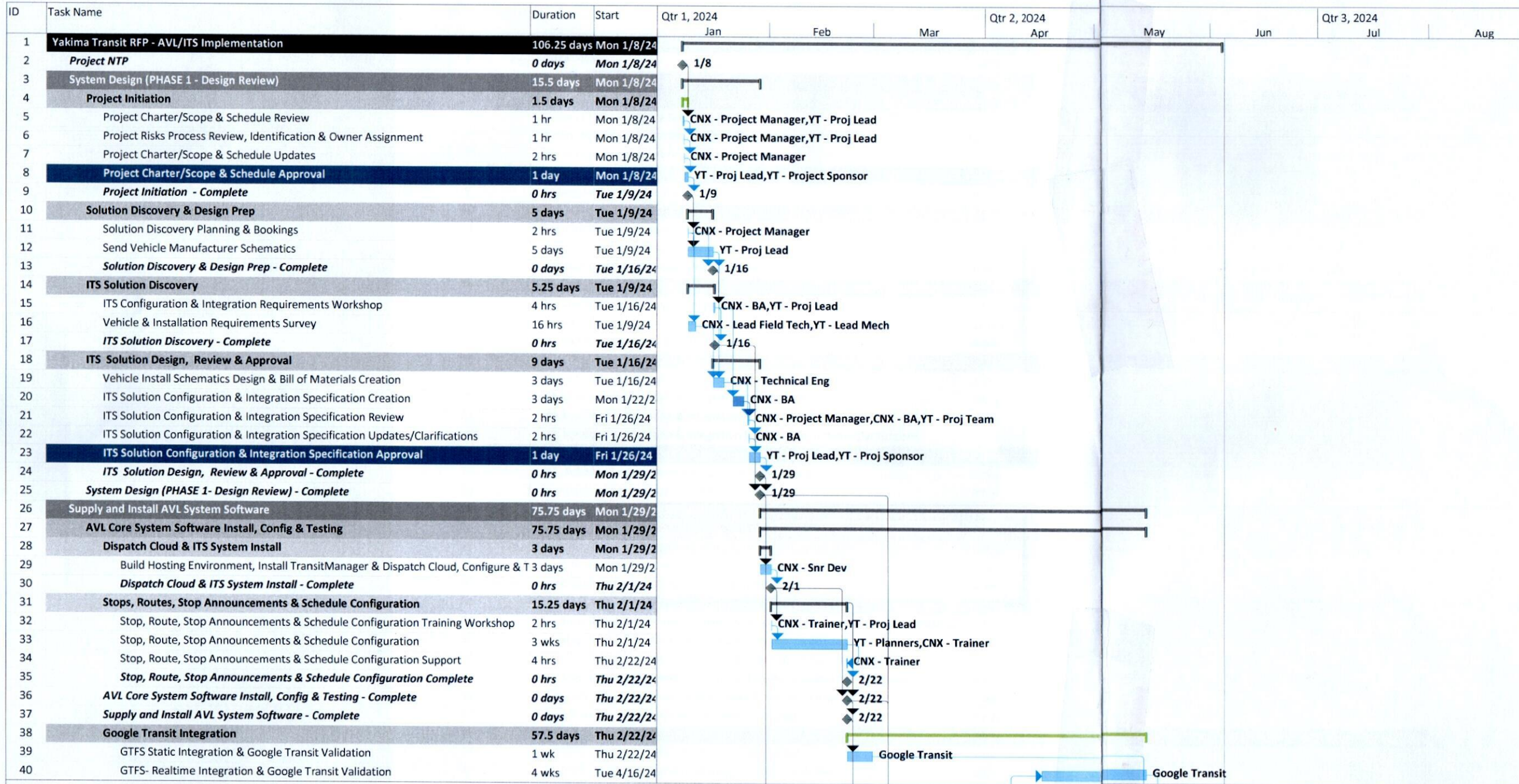
MILESTONE PAYMENT SCHEDULE

ONBOARD INTEGRATED TECHNOLOGY SYSTEM RFP 12324P

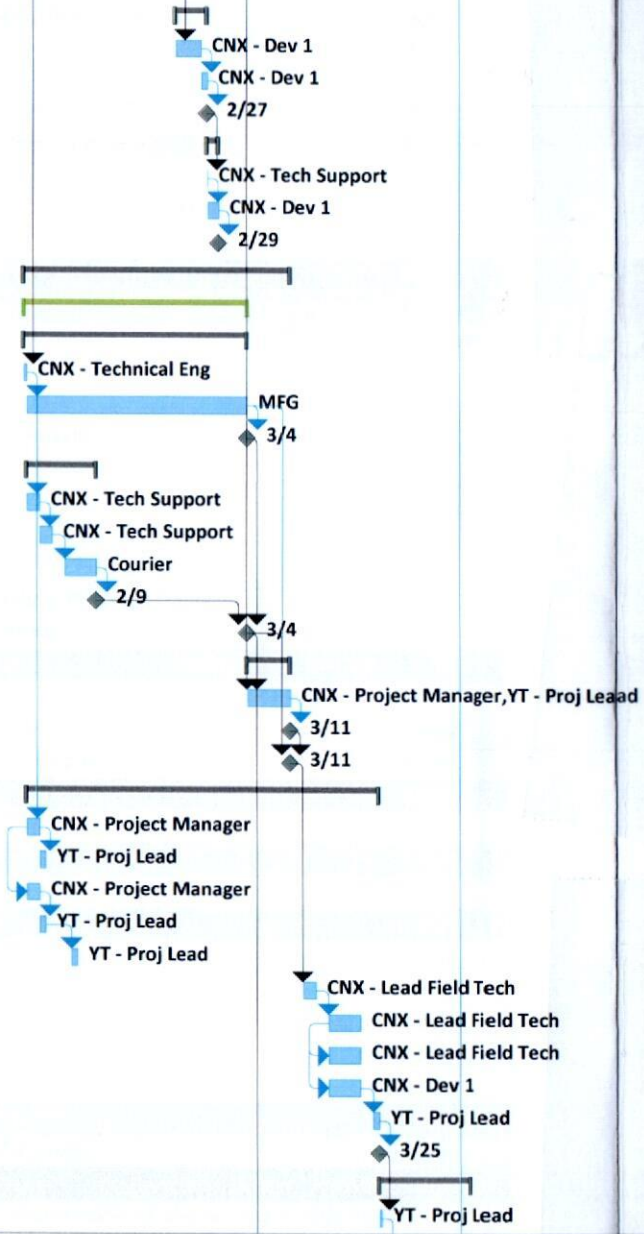
The following Milestone Payment Schedule refers to the main project, itemized project pricing for EXISTING BUSES, items 1a and 2-6.

Schedule Approved	10%
Design Approved and Hardware Order	35%
System Configuration	20%
Vehicle Install Complete	20%
Training complete	5%
CAD/AVL Project Acceptance Complete	10%
Total	100%

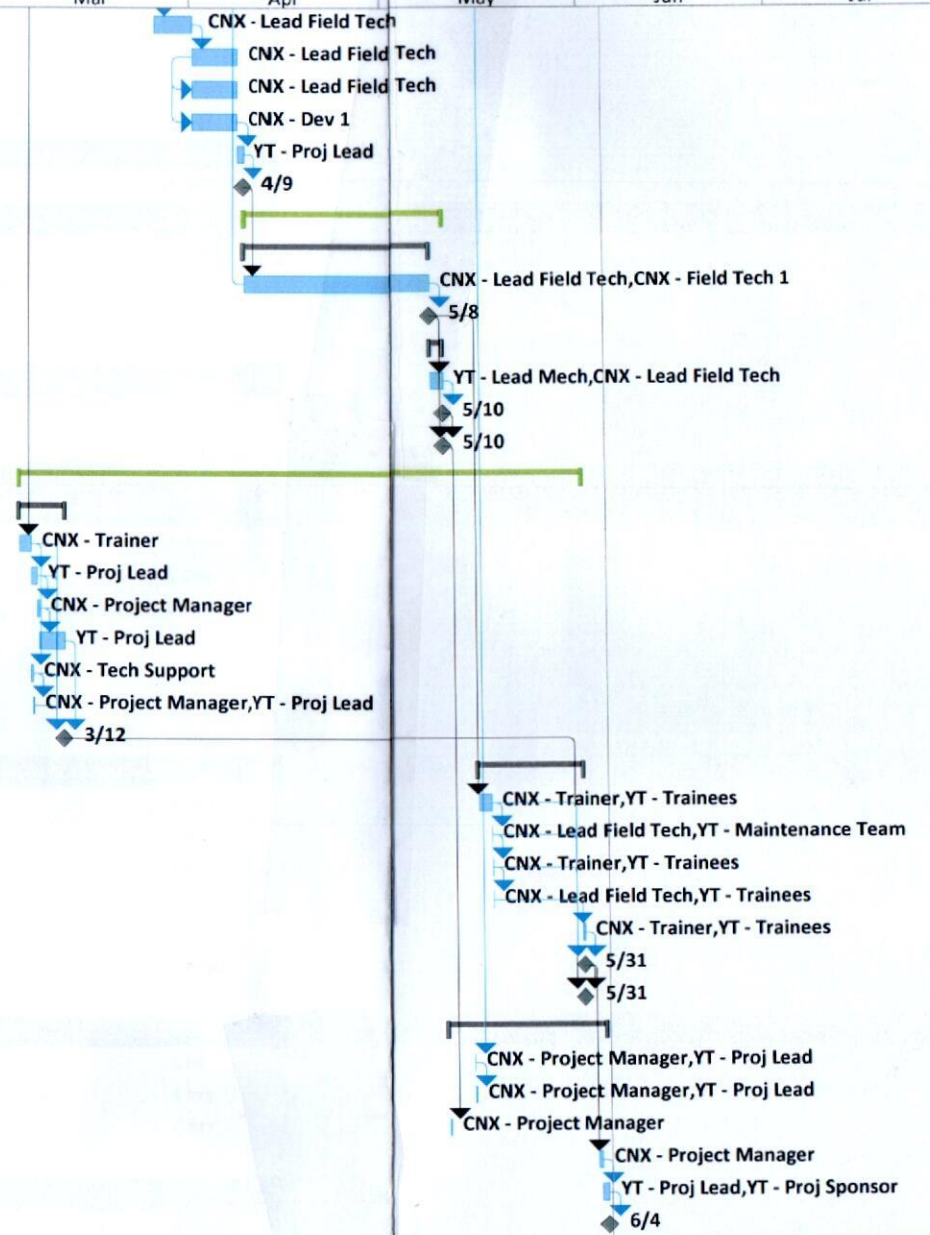
The Support and Maintenance fees will be paid annually. First year of software and support will begin on Project Completion Acceptance date.



ID	Task Name	Duration	Start	Qtr 1, 2024			Qtr 2, 2024		Qtr 3, 2024	
				Jan	Feb	Mar	Apr	May	Jun	Jul
41	Google Transit Integration Support	4 hrs	Mon 5/13/24							
42	Google Transit Integration - Complete	0 days	Tue 5/14/24							
43	Mobile Application & Public Website Configuration & Testing	3 days	Thu 2/22/24							
44	Branded Mobile App Configuration, Deployment & Testing	16 hrs	Thu 2/22/24							
45	Public Website Configuration & Testing	8 hrs	Mon 2/26/24							
46	Mobile Application & Public Website Configuration & Testing - Complete	0 hrs	Tue 2/27/24							
47	SMS Arrival & Service Alert Notification Configuration & Testing	1.56 days	Tue 2/27/24							
48	SMS Number Procurement	0.5 hrs	Tue 2/27/24							
49	SMS Arrival & Service Alert Notification Configuration & Testing	12 hrs	Tue 2/27/24							
50	SMS Arrival & Service Alert Notification Configuration & Testing - Complete	0 days	Thu 2/29/24							
51	Supply and Install AVL System Hardware	30.5 days	Mon 1/29/24							
52	Hardware Procurement & Shipping	25.5 days	Mon 1/29/24							
53	Hardware Procurement & Shipping	25.5 days	Mon 1/29/24							
54	Hardware Procurement	4 hrs	Mon 1/29/24							
55	Hardware Fulfillment & Shipping	5 wks	Tue 1/30/24							
56	Hardware Procurement & Shipping - Complete	0 hrs	Mon 3/4/24							
57	System Hardware Configuration, Testing & Shipping	9 days	Tue 1/30/24							
58	Medius & MDT Configuration & Testing	2 days	Tue 1/30/24							
59	Package Hardware for Shipping	2 days	Thu 2/1/24							
60	Hardware Shipping	5 days	Mon 2/5/24							
61	System Hardware Configuration, Testing & Shipping - Complete	0 hrs	Fri 2/9/24							
62	Hardware Procurement & Shipping - Complete	0 hrs	Mon 3/4/24							
63	Installation Planning & Bookings	5 days	Tue 3/5/24							
64	Installation Planning & Bookings	5 days	Tue 3/5/24							
65	Installation Planning & Bookings - Complete	0 days	Mon 3/11/24							
66	Supply and Install AVL System Hardware - Complete	0 days	Mon 3/11/24							
67	Functional Acceptance Testing (PHASE 2)	40 days	Tue 1/30/24							
68	(FAT) Plan Creation	2 days	Tue 1/30/24							
69	(FAT) Plan Creation Approval	1 day	Thu 2/1/24							
70	(FAT) Design Creation	2 days	Tue 1/30/24							
71	(FAT) Design Approval	1 day	Thu 2/1/24							
72	Define (FAT) Vehicle	1 day	Tue 2/6/24							
73	Install (FAT) Vehicle ITS Equipment	2 days	Thu 3/14/24							
74	Functional Acceptance Testing Execution	5 days	Mon 3/18/24							
75	Functional Acceptance Testing Defects and Reporting	5 days	Mon 3/18/24							
76	Functional Acceptance Testing Fixes & Regression Testing	5 days	Mon 3/18/24							
77	Functional Acceptance Testing Sign Off and Approval	1 day	Mon 3/25/24							
78	Functional Acceptance Testing (PHASE 2) - Complete	0 days	Mon 3/25/24							
79	Pilot Testing Program (PHASE 3)	10.25 days	Tue 3/26/24							
80	Define 2x Vehicles for Pilot Testing Program "(FAT) Vehicle will also be used for Pilot Testir 2 hrs	2 hrs	Tue 3/26/24							



ID	Task Name	Duration	Start	Qtr 1, 2024			Qtr 2, 2024			Qtr 3, 2024		
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
81	Install ITS Equipment on 2x Vehicles for Pilot Testing Program	4 days	Tue 3/26/24									
82	Begin Pilot Testing Program	1 wk	Mon 4/1/24									
83	Pilot Testing Program Defects and Reporting	1 wk	Mon 4/1/24									
84	Pilot Testing Program Fixes & Regression Testing	1 wk	Mon 4/1/24									
85	Pilot Testing Program Sign Off and Approval	1 day	Mon 4/8/24									
86	Pilot Testing Program (PHASE 3) - Complete	0 days	Tue 4/9/24									
87	Vehicle Installation & Rollout - (PHASE 4)	23 days	Tue 4/9/24									
88	ITS Vehicle Installation & Testing - 21 Vehicles	21 days	Tue 4/9/24									
89	CNX Full ITS Vehicle Installation & Testing - 8 Hours Per Vehicle - 2 Resources	21 days	Tue 4/9/24									
90	ITS Vehicle Installation & Testing - Complete	0 hrs	Wed 5/8/24									
91	Vehicle Installation Road Test Sign-off	2 days	Wed 5/8/24									
92	Vehicle Installation Inspection & Road Test Sign-off	2 days	Wed 5/8/24									
93	Vehicle Installation & Road Test Sign-offs - Complete	0 hrs	Fri 5/10/24									
94	Vehicle Installation & Rollout - (PHASE 4)	0 days	Fri 5/10/24									
95	Provide System Training	64 days	Tue 3/5/24									
96	Training Prep	5.13 days	Tue 3/5/24									
97	Training Plan Creation & Submittal	2 days	Tue 3/5/24									
98	Training Plan Approval	1 day	Thu 3/7/24									
99	Send User Logins to Dispatch Cloud & ITS System, & Related Training Documentation.	1 hr	Fri 3/8/24									
100	Confirm User Access Dispatch Cloud & ITS System	16 hrs	Fri 3/8/24									
101	Support Desk Setup	1 hr	Thu 3/7/24									
102	Make Bookings for Training	4 hrs	Thu 3/7/24									
103	Training Prep - Complete	0 days	Tue 3/12/24									
104	Training Workshops	12.75 days	Wed 5/15/24									
105	Onsite ITS Operations & Dispatch Training	2 days	Wed 5/15/24									
106	In-vehicle Hardware Maintenance Training	2 hrs	Fri 5/17/24									
107	System Admin Training	1 hr	Fri 5/17/24									
108	Real-time Passenger Information Systems Maintenance & Troubleshooting Training	1 hr	Fri 5/17/24									
109	Report & Analysis Training	2 hrs	Fri 5/31/24									
110	Training Workshops - Complete	0 days	Fri 5/31/24									
111	Provide System Training - Complete	0 hrs	Fri 5/31/24									
112	Project Closure	17 days	Fri 5/10/24									
113	Requirements Compliance Review	1 hr	Tue 5/14/24									
114	Confirm SMA & BAU Support Process, Hardware Warranty List, & Spares List	4 hrs	Tue 5/14/24									
115	Generate Hardware Warranty Certificate	4 hrs	Fri 5/10/24									
116	Generate Project Acceptance Certificate	2 hrs	Mon 6/3/24									
117	Full Project Approval & Closure	1 day	Mon 6/3/24									
118	Project Closure - Complete	0 days	Tue 6/4/24									



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- 5.4. This section will not apply, however, to:
 - 5.4.1. a party's breach of confidentiality;
 - 5.4.2. to any claim arising out of your breach of the license restrictions set forth in this License Agreement; or
 - 5.4.3. to any liability we may have to you under the legislation referred to in section 1.4 above (New Zealand Users)

6. Term and Termination.

- 6.1. **Term.** The term of this License Agreement and your licenses to the Software and Documentation will commence as of the first to occur of the date of your acceptance of this License Agreement or the date the Software is made available to you and you have commissioned it, and will continue until the termination or expiration of the term of all of the licenses of the Software, unless earlier terminated at the end of any timeframe specified in a Sales Order or as provided below.
- 6.2. **Termination.**
 - 6.2.1. Connexionz may terminate this License Agreement effective ten (10) days after written notice to you in the event that you fail to pay when due any fees for the Software as provided in a Sales Order.
 - 6.2.2. Either party may terminate this License Agreement effective thirty (30) days after written notice to the other party ("Breaching Party") in the event that the Breaching Party has breached a material provision of this License Agreement and the Breaching Party does not cure such breach within such thirty (30) day period.
- 6.3. **Rights and Obligations upon Termination or Expiration.**
 - 6.3.1. Upon termination of this License Agreement, all rights granted to you under this agreement will immediately cease and you will:
 - (i) immediately discontinue all use of the Software and Documentation; and
 - (ii) destroy all copies of the Software and Documentation.

6.3.2. Termination of this License Agreement for any reason will not excuse your obligation to pay in full any and all amounts due for the Software, nor will termination result in a refund of any fees paid by you for the Software. The absence of a right to a refund will not preclude you from bringing a claim for damages or other compensation which you are otherwise entitled to bring under this License Agreement.

6.4. **Continuing Obligations.** The terms and conditions in this License Agreement that by their nature and context are intended to survive any termination of this License Agreement, including, without limitation, Sections:

(i) 2 (Intellectual Property);

(ii) 4 (Intellectual Property Indemnification);

(iii) 5 (Limitation of Liability);

(iv) 6 (Term and Termination);

(v) 7 (Disclaimer of Damages); and

(vi) 8 (Miscellaneous)

will survive such termination of this License Agreement for any reason and will be fully enforceable thereafter.

7. Miscellaneous.

7.1. Notices.

7.1.1. All notices, demands or other communications under this License Agreement will be in writing, will reference this License Agreement, and will be deemed given:

(i) when delivered personally;

(ii) five (5) days after having been sent by registered or certified mail, return receipt requested; or

(iii) one (1) day after deposit with a commercial overnight carrier, with written verification of receipt.

7.1.2. All communications will be sent to the address for such party as last provided to the other, subject to modification by giving notice as provided in this agreement.

7.2. Governing Law.

7.2.1. This License Agreement will be construed and governed in accordance with the applicable laws as determined (based on your location) in accordance with the table set out at the end of this section without regard to any rules of conflicts or choice of law provisions that would require the application of the laws of any other jurisdiction.

7.2.2. All disputes arising out of or relating to this License Agreement will be submitted to the exclusive jurisdiction of the applicable courts as determined (based on your location) in accordance with the table set out at the end of this section , and each party to this Agreement irrevocably consents to such jurisdiction and waives all objections to this venue.

7.2.3. The parties to this License Agreement as a result of this document waive trial by jury in any action, proceeding, claim or counterclaim brought by either of them against the other on any matters whatsoever arising out of or in any way connected with this License Agreement.

Jurisdiction where you are permanently located	Governing Law of this Licence Agreement	Courts with jurisdiction to hear matters concerning this License Agreement
United States	Laws of the State of Washington	State or federal courts of competent jurisdiction located in Yakima County, Washington
Canada	The Laws of Canada	The Courts of Canada
Australia	The Laws of Australia	The Courts of Australia
United Kingdom	The Laws of the United Kingdom	The Courts of the United Kingdom
European Union	The laws of the European Union Member Country in which the licensee is permanently located.	The Courts of the European Union Member Country in which the licensee is permanently located.
New Zealand	The laws of New Zealand	The Courts of New Zealand
Other (rest of the world)	The laws of New Zealand	The Courts of New Zealand

7.3. Severability.

7.3.1. If any one or more of the provisions of this License Agreement is determined to be invalid, illegal, or unenforceable, the validity, legality, and enforceability of any of the remaining provisions or portions of that will not be affected or impaired as a result of that and will nevertheless be binding between the parties.

7.3.2. In the event any provision of this License Agreement is found to be invalid, illegal, or unenforceable, the parties will modify that provision in a manner that gives effect to the intent of the parties in entering into the License Agreement.

7.4. Waiver or Delay.

7.4.1. No failure to exercise or delay by a party in exercising any right, power, or remedy under this License Agreement operates as a waiver of such right, power, or remedy.

7.4.2. A single or partial exercise of any right, power, or remedy does not preclude any other or further exercise of that or any other right, power, or remedy.

7.4.3. A waiver is not valid or binding on the party granting the waiver unless made in writing.

7.5. Export Laws.

7.5.1. The Software is subject to United States export control jurisdiction, and may not be shipped, transferred, re-exported to any country or recipient, or used for any purpose prohibited by any applicable international and national laws that apply to the Software, including the U.S. Export Administration Regulations as well as end-user, end-use, and destination restrictions issued by the United States and other governments.

7.5.2. You will not export or re-export the Software without first obtaining the appropriate U.S. or foreign government export licenses.

7.6. Entire Agreement.

7.6.1. This License Agreement is made in conjunction with that certain Professional Services Agreement for 12324P Onboard Integrated Technology System ("PSA Agreement") between the City of Yakima and Connexionz. This License Agreement and the PSA Agreement constitute the entire understanding and agreement between the parties with respect to the subject matter of this License Agreement and the PSA Agreement. In the event that there is a conflict in terms between this License Agreement and the PSA Agreement the terms of the PSA Agreement shall control.

7.6.2. No modifications may be made to this License Agreement except in writing, signed by both parties.

7.7. **Benefit of Agreement.** This License Agreement will bind and inure to the benefit of the parties and their respective permitted successors and assigns.

7.8. **Cumulative Remedies.** Except as otherwise provided by this License Agreement, all remedies of the parties under this agreement are non-exclusive and are in addition to all other available legal and equitable remedies.

7.9. **Force Majeure.** Neither party ("Affected Party") will be liable or deemed to be in default for any delay or failure in performance under this License Agreement (except for payment obligations) resulting, directly or indirectly, from acts of God, civil or military authority, acts of the public enemy, war, riots, civil disturbances, insurrections, accidents, fire, explosions, earthquakes, floods, the elements, strikes, labor disputes or any causes beyond the Affected Party's reasonable control provided that the Affected Party will promptly resume or remedy, as the case may be, the performance of its obligations under this Agreement as soon as practicable.

7.10. Construction of Agreement.

7.10.1. Each party acknowledges that it has had the opportunity to review this License Agreement with legal counsel of its choice.

7.10.2. The titles and headings in this agreement are for reference purposes only and will not in any manner limit the construction of this License Agreement, which will be considered as a whole.

7.11. Choice of Language.

7.11.1. The original version of this License Agreement has been written in English, which will be the controlling language in all respects.

7.11.2. Any translations into any other language are for reference only and will have no legal or other effect.

7.12. Personal Data; Consent to Process and Transfer.

7.12.1. You agree to comply with all applicable laws and regulations which may govern your use of the Software, including, but not limited to, laws pertaining to the collection and use of personal data and to the transfer of data over state or other jurisdictional lines.

7.12.2. You agree that Connexionz, its affiliates, and agents may collect and use information you provide in relation to any support services performed with respect to the Software and requested by you.

7.12.3. Connexionz agrees not to use this information in a form that personally identifies you, except to the extent necessary to provide such services.

7.12.4. You agree that Connexionz may transfer your information to the United States or other countries for use in accordance with this Section.

7.13. **Conflicts.** In the event of a conflict between this License Agreement and any other document or agreement involving the Software, the terms of this License Agreement shall take precedence to the extent of such conflict.

7.14. **Trademarks.** This License Agreement does not grant you any rights in connection with any trademarks and/or service marks of Connexionz.

Onboard Integrated Technology System

City of Yakima

In response to Request for Proposal

by: City of Yakima
for: Intelligent Transportation Systems
ref: 12324P
Date of this Proposal: September 14, 2023



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Tab Two





CITY OF YAKIMA REQUEST FOR PROPOSAL # 12324P
SIGNATURE SHEET

THIS IS NOT AN ORDER

RFP Release Date: August 2, 2023

Proposal Receipt: Proposers must first register with PublicPurchase.com and Proposal shall be completely uploaded into PublicPurchase.com no later than the date and time listed below. Register as early as possible and do not wait until the due date to upload your documents, as this may take some time. Late Proposals will not be accepted or evaluated. If you try to submit a Proposal late, the electronic system will not receive it. Proposal openings are public. Proposals shall be firm for acceptance for ninety (90) days from date of Proposal opening, unless otherwise noted.

RFP's ARE ONLY RECEIVED THROUGH PUBLICPURCHASE.COM

Purchasing For: City of Yakima Transit Division 2301 Fruitvale Blvd. Yakima, WA 98902	Buyer in charge of this procurement (Contact for further information): Susan Knotts, NIGP-CPP, CPPO, CPPB Buyer II
Proposals Must be completely uploaded by: September 7, 2023 at 2:00:00 PM PST Public Opening <input checked="" type="checkbox"/>	Phone: (509) 575-6095 E-Mail Address: Susan.Knotts@YakimaWA.Gov

PROJECT DESCRIPTION SUMMARY

Onboard Integrated Technology System for Yakima Transit

Enter Prompt Payment Discount: ___NA___% / net ___N/A___ days	We/I will complete project within ___112___ days. MUST BE COMPLETED NO LATER THEN January 31, 2024.
---	---

Delivery Details: FOB Destination, Freight Prepaid, Inside Delivery required

I hereby acknowledge receiving **addendum(a)** __1__, __2__, __3__, __4__ (use as many spaces as addenda received)

In signing this Proposal we also certify that we have not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a Proposal; that this Proposal has been independently arrived at without collusion with any other Proposer, competitor or potential competitor; that this Proposal has not been knowingly disclosed prior to the opening of Proposals to any other Proposer or competitor; that the above statement is accurate under penalty of perjury.

Furthermore, the Washington State Interlocal Cooperative Act (RCW 39.34) provides that other governmental agencies may purchase goods or services on this solicitation or contract in accordance with the terms and prices indicated therein **if all parties agree**. The City does not accept any responsibility or involvement in the purchase orders or contracts issued by other public agencies.

We will comply with all terms, conditions and specifications required by the City of Yakima in this Request for Proposal and all terms of our Proposal.

Company Name Connexionz Limited	Company Address UNITED STATES 27720 Avenue Scott. Unit 190 Santa Clarita, CA 91355	
Name of Authorized Company Representative (Type or Print) Tony Kan	Title Executive Chair	Phone (+1 661)568 2674
Signature of Above 	Date 15/09/23	Email Address tony.kan@connexionz.com
		Fax ()

Tab - Tran itta etter



Tab 3 - Transmittal Letter

13 September 2023

Susan Knotts
City of Yakima Transit Division
2301 Fruitvale Blvd.

Yakima, WA 98902

UNITED STATES
27720 Avenue Scott.
Unit 190
Santa Clarita, CA 91355
Tel: +1 213 807 9366
www.connexionz.com

Request for Proposal (RFP) 12324P Onboard Integrated Technology System

Dear Susan and the transit team at the City of Yakima Purchasing,

Connexionz (CNX) thank you for the opportunity to participate in the above-referenced RFP, with which there are no known conflicts of interest. We look forward to earning your trust for a business relationship that serves your ever-changing needs and will focus on the welfare and satisfaction of your ridership and staff.

Every year our customers provide over 32 million passenger trips using our intelligent transit solutions (ITS) operating in the background of their public transit commutes. At the root of our successful ITS system are some of the world's most reliable and accurate real-time arrival predictions that were independently analyzed and proven to be accurate more than 99% of the time.

You won't be left high and dry.

Many of our customers have been with us for 15 or more years. Unsurprisingly, their needs have evolved, and our system has evolved along with them.

“When we went looking for a new system, we wanted to find a partner not just a vendor. After all these years with Connexionz, I want to tell you, that I can say, we found that partner.”

Steve Pont, COO, TriDelta Transit

As part of your support and maintenance package we do preventative maintenance.

This means with our system, your riders will come to rely on it without a second thought, planning their trips, timing their walk to their stop, following the progress of their journey, and getting off at the right time.

Our system will help you expand and grow your operations.

Research shows that the biggest factor that stops people choosing public transit is the anxiety of not reaching your destination on time to see someone or make an event.

With our system, your passengers can plan their trips, use their smartphones to track progress as they make their journey. Their journey plan will even tell them which stop to walk to. At the stop, external signage and voice announcements will confirm that they are on the right bus, inside, they will hear and potentially see announcements that confirm what they are seeing on their phones, and let them know when to get off and if need be, connect to another service. They can even use our system to send messages to the vehicle ahead to delay their departure if the current vehicle is running late and there is risk of missing a connection or transfer.

All this gives your riders confidence. With confidence, comes trust as your riders realize that the information is accurate and reliable. Over time, more riders will choose transit as an option. More riders mean more funding, and your operations can grow.

We can grow along with you. The biggest fleet we have tracked is over 400 strong.

Bringing ITS system technology to Transit Centers

As you continue to advance in your Transit Planning, a partnership with us will be perfect to help your technology objectives. We have extensive experience with integrating ITS systems with Transit Center operations such as Kayak Transit in Central Oregon, Soltrans in the Bay Area of California, and Star Tran in Lincoln Nebraska.

From bringing real time ETA and ETD displays to a transit center, tying your PA systems into our system for announcing arrivals and departures, all the way through to electronic ushering and dynamic bus bay allocations, we cover a wide range of sophistication and complexity.

By doing so, you can allow your riders to enjoy the benefits of your system wherever you want them to have it. We have a product called TimeView that makes it incredibly easy (and fast) to configure a new display.

Putting real time passenger information signage in public spaces like shopping mall foyers and food courts turn them into transit centers where riders can wait for their transit services in comparative comfort and safety.

With our system you can take big steps toward greater efficiency

Our customers love our tools that allow your team to set up their work day, and quickly identify any disruptions through the day. Then our systems provide them with tools to quickly resolve them.

A big step towards greater efficiency is being able to track your KPIs. With our Insights tool you can create beautiful dashboards which can help you to see how your system is doing at a glance. They make great illustrations for your management and board reports too.

We can help you with improving customer service leading to higher customer satisfaction

When a complaint comes in our system provides you with the bullet proof historical evidence you need to show whether a trip departed early or was running late. You can easily see whether or not your driver was driving too fast.

Our system also gives you great information that you can use to support your route and schedule changes during public consultations.

More importantly, our system will provide you with the information you need to optimize your routes and schedules or to plan new ones.

Better on-time performance means that your riders can minimize the time they wait at stops so they can avoid exposure to poor weather and they will feel safer too.

Gillig friendly

We note that you have incorporated Gillig Vehicles over the years, and your plan is likely to continue this strategy. We have worked well with Gillig Vehicles for many years and they frequently install our system in their factory for our customers who are renewing or expanding their fleets.

An ITS system that grows with you

Our customers also use:

- Mobile video surveillance and duress alarms for driver and passenger safety.
- Wayside signage, so that passengers can gain even better access to real-time ETAs.
- On-vehicle public WiFi to enhance your passengers' travel experience.
- Traffic Signal Prioritization: to give your vehicles green lanes through congested traffic and so improve your on-time performance.

We recently met with a Transit Agency. One of their executives, rang one of our customers to find out what our customer service was like beforehand. During the discussion, another executive asked the question, “So what is Connexionz’s customer service like?” The answer: “Apparently, they walk on water!”

Audio recorded meeting, 26 July 2023

Putting it together...

All the above, coupled with our experience of successful deployment, makes us an incredibly compelling partner for Yakima’s goals with regard to operational efficiency and ridership satisfaction overall.

We have applied significant effort and resources to identify the best optimal configuration to satisfy your requirements and long-term vision. Within this packet, you will find all submission requirements including our response to your RFP, and price for core functionality requirements.

Our discount for you

We are building partnerships with more and more customers in your region. They include Tribal customers in Washington and Oregon, and a strong presence in the rest of California. Working with you will contribute to the economies of scale to be had in servicing customers in your area.

For this reason, we have applied a 30% discount to the pricing we’re offering you. This drops the asking price for your complete system, including 5 years of support and maintenance, from approximately \$701,423 to approximately \$488,290, saving over \$213,130.

We look forward to discussing our proposal in more detail with you.

Yours sincerely, Authorized Representative:



Executive Chair

for

Patrick O’Donnell

Senior Sales Executive

Tel: (712) 242-8688

patrick.odonnell@connexionz.com

This Proposal shall remain valid for a period of no less than 120 days from the date of submittal.

If a Freedom of Information Act request is received by the City of Yakima Purchasing, then please advise us, and we will provide you with a redacted copy.

Tab 4 - Response to e to enera Re uire ent



Tab 4 - Response to General Requirements

1. Proposer Qualifications

Connexionz is a leading provider of Fixed Route Integrated Technology Solutions – and has over thirty years of Transit Technology experience with Transits throughout North America, and around the world.

2. Staff Qualifications

We have years of experience working with agencies who have limited staff and understand that roles are often not fixed. We recognize that your personnel may be pulled away to perform other tasks throughout implementation, and we have formulated our project delivery and training plan to suit these occurrences.

We value the sense of community and communication within our organization. The benefit of this is that the project team at Connexionz will know how you operate and will make it easier to resolve instances quickly.



Ability to provide timely support.

Our team provides support through our 24/7/365 manned support desk for all incidents raised providing a current support and maintenance agreement in place.

Target resolution times are documented in our Support and Maintenance Agreement for each incident priority type, and if incidents cannot be resolved remotely, then Connexionz is committed to sending resources on-site free of charge to resolve all incidents covered under support.

The Support Team monitors all customer systems to identify issues and will proactively raise support tickets as required to ensure all customer systems are operational.

Monthly Incident Status Reports are sent to all customers, and support update calls are booked between customers and our Support Technician.

All Priority 1 Incidents will receive a P1 Incident report within 10 days of the incident occurring, which details the cause, actions taken, timelines, and what steps have been put in place to prevent a similar incident from occurring again in the future.



This picture was taken by Nune, Marcos, and Jorge while installing infotainment into Golden Empire Transit vehicles in sweltering hot temperatures; Yet, still smiling!

Nune Arslanian - Project Manager

Nune's role will be the Project Manager, her responsibilities will include:

- Develop the project schedule and project charter and work with you to ensure all goals and deliverables are scoped.
- Will work with our Lead Tech and Procurement Team to procure all hardware under the proposed
- Will direct the work, document reports, control change, and monitor quality.
- Balance the scope schedule and utilize key resources.
- Oversees the cost of the project.
- Oversees the installation phase and testing of all equipment.

Vaughan Keenan – Chief Operating Officer

Vaughan's role will be Chief Operating Officer, his responsibilities will include:

- Work with Nune to ensure hardware, software, and key resources are made available for the Agencies' project.
- Escalation point for issues.

Paul Stevens – Chief Technical Officer

Chief Technical Officer (software lead) for you. Paul's role on the contract will include:

- Technical expert when it comes to integration of 3rd party software/hardware with Connexionz CAD/AVL System.
- Future proofs Connexionz CAD/AVL system to ensure you return on investment and opportunity to grow with upgrades.

Mike Stocks – Systems Engineer

Mike will be the System Engineer for you; his role will include:

- Manages the hardware & software requirements for the project and ensures the architecture of the Connexionz CAD/AVL system falls within the scope of this project.

Joey Dillon – Trainer & Customer Support Tier 1

As the Trainer for you, Joey will:

- Prepare the Training Agenda
- Provide remote workshops and onsite training for the Agencies trainees.
- And as Tier 1 Customer Support for you, Joey will:
- Customer support to the Agencies for all instances from initial response to resolution after the project has been deployed.

Marcos Mendez – Field Technician

Role as Field Technician within the Installation Team Marcos will:

- Ensures all hardware has been configured and tested prior to installation.
- Participates in the deployment of hardware and installs then tests to ensure it meets your and our quality assurance check.
- Troubleshoots, repairs, and ensures hardware is in good working order.
- Provides preventative maintenance to hardware and ensures firmware is kept up to date.

Pam Hesel – Field Technician

Role as Field Technician within the Installation Team for the Agencies:

- Ensures all hardware is ready for shipment.
- Manages inventory of the City of Tracy's ITS assets (parts/components)
- Troubleshoots, repairs, and provides preventative maintenance to systems installed at the City of Tracy.

Resumes of Key Personnel for this Contract



Nune Arslanian

Project Manager

Profile Summary

Nune joined the Connexionz team in 2021 as a Project Manager based at our Santa Clarita, CA office.

Nune has over 5+ years of IT project management experience and is a Certified Scrum Master CSM®, experienced in Agile Development Methodology, and System Analysis, and has strong knowledge of PMBOK.

Key Responsibilities:

As the Project Manager for The City of Tracy, she will be responsible for the overall success of the team and project. Within this, she will develop the project schedule, and project charter, and work with you to ensure all goals and deliverables are scoped.

Nune will direct the work, document reports, controlling change, and monitor quality throughout the project. Additional responsibilities include balancing the scope, schedule, and utilizing key resources while overseeing the cost of the project, as well as the entire installation phase and testing of all equipment.

Key Projects:

- City of Lincoln (StarTrans) – ITS implementation of CAD/AVL systems and the deployment of related hardware.
- City of Racine – implementation of RTT system and the deployment of related hardware. Nune was the Project Manager.
- Solano County Transit (SolTrans) – ITS implementation of CAD/AVL systems and the deployment of related hardware. Won in 2021, and Nune is the project manager on this contract.

Professional Development

2021	Certified ScrumMaster CSM®
2020	PMP exam prep course
2014	Project Management Fundamentals
2014	Agile Project Management
2014	Time Management Fundamentals
2013	Microsoft SQL Server 2012
2012	IT Project Management

Career History

Connexionz | Project Manager

(Jun 2021 - Present)

- Managed full system implementation life cycle including Requirements Gathering, Scope Management, Process Design, System Configuration, Integration, User Acceptance Testing, Training and Go-Live
- Coordinated and facilitated the project’s daily work including planning, daily scrums, and retrospectives.
- Projects primarily included web-based information collection, tracking, analysis, planning, and reporting systems for national governments and organizations’ management usage.
- Communicated directly with high-level project sponsors in client organization/governmental agencies and its contractors and vendors.
- Ensured final product met the needs of the various key stakeholders.

Synergy International Systems – Global IT system

provider | Project Manager/Systems Analyst

(July 2015 - Sept 2017)

Workfront - Utah-based IT solutions company |

Technical Support Engineer

(June 2014 – June 2015)

HSBC Bank Armenia CJSC, Change Delivery Department |

Associate Project Manager (IT)

(Jan 2013 – June 2014)

HSBC Bank Armenia CJSC, Main Office | Customer Service

Representative

(Sept 2008 – Dec 2012)

Education

2022 Project Management Professional (PMP)®

2008 MPA (Master’s) - Public Administration - Public Administration Academy of Armenia

2006 BS Engineering - Microsystem Engineering - State Engineering University of Armenia

Languages

Fluent in English, Russian, Armenian / Basic proficiency in Spanish



Vaughan Keenan

Chief Operating Officer

Profile Summary

Vaughan is instrumental in turning our customers into project partners and will keep you updated every step of the way. In the background he keeps all Connexionz teams on task, ensuring quality solutions are delivered on time and within budget.

Vaughan is a certified PRINCE2 Practitioner and has 15 years history of making significant contributions – both technical and project-discipline-related – to the successful delivery of software and technology products.

Key Responsibilities:

As Chief Operating Officer for you, he will work with Nune to ensure hardware, software, and key resources are made available for your project.

Key Projects:

- Chief Operations Executive/Project Manager for ITS implementation of CAD/AVL systems at Solano County Transit (SolTrans)
- Chief Operations Executive for ITS implementation of CAD/AVL systems at Muskegon Area Transit System
- Chief Operations Executive for ITS implementation of CAD/AVL systems at the City of Racine
- Chief Operations Executive for ITS implementation of CAD/AVL systems at the City of Gatlinburg
- Chief Operations Executive for ITS implementation of CAD/AVL systems at Golden Empire Transit

Professional Development

Jun 2010	Prince2 Practitioner
Nov 2007	JD Edwards CNC
Mar 2007	XSOL Process Mapping Certified Trainer
Feb 2006	JD Edwards OneWorld XE Application
Nov 2005	Development MS Reporting Services Solutions
Dec 2004	Development Software Testing for Users and Developers

Career History

Connexionz | Chief Operating Officer
(May 2020 - Present)

Connexionz | Project Manager
(Apr 2019 - May 2020)

Espire | Operations Team Lead and Project Manager
(2018 - Feb 2019)

Fusion5 | ApprovalPlus Team Lead and Project Manager
(2013-2018)

Fusion5 | Project Manager
(2010-2012)

Fusion5 | Project Coordinator
(Jan 2010-May 2010)

Fusion 5 | Technical Consultant
(Feb 2007 -May 2010)

Foodstuffs NZ | Business Analyst and Application Specialist
(Aug 2005 – Feb 2007)

Foodstuffs NZ | eCommerce Integration Specialist
(Apr 2004 – Aug 2007)

Weltec | Website Administrator
(Dec 2003 – Apr 2004)

Education

Jun 2002 – Dec 2003	Bachelor of Information Technology
Jun 2001 – Jun 2002	Diploma in Business Computing
Jun 2000 – Jun 2001	Certificate in Business Computing
Jan 2000 – Jun 2000	Introductory Certificate in Business Computing

Awards

Workplace

2017	ERP People's Choice
2010	ERP Customer Service
2008	Newcomer of the Year

Award for Excellence

2003	Bachelor of Information Technology
2003	Business School (Commercial Law)
2002	Diploma in Business Computing
2001	Certificate in Business Computing
2000	Introductory Certificate in Business Computing



Paul Stevens

Chief Technical Officer

Profile Summary

Paul has 25 years' extensive software design and development experience which comes with 15 years of customer-facing business development and team leadership.

Paul has a bachelor's degree and numerous technology certifications including Business Analysis, SQL Server Database Design and Development, MapInfo Spatial Development, Pivotal Development, SAP Financial Processes, NetSuite Scripting, and customization.

Paul is well-equipped to get the best productivity and performance from the Connexionz software development team, having done the same in the past for organizations of varying sizes, including his own companies as well as large corporates like Fusion5.

Key Responsibilities:

Paul oversees the Development Team to maintain and support 3rd party software/hardware integrations with CAD/AVL Systems. This is to future-proof our CAD/AVL system so as to enable it to continue to grow with your future plans, assisting in ensuring a return on investment for years to come.

Key Projects:

- NY Waterway – The Chief Technology Officer completed the business analysis, system design, development, and implementation of their Ferry Transit solution
- SolTrans – The Chief Technology Officer completed the system design and managed the implementation of Connexionz Core and TimeView Transit Center.
- StarTran – The Chief Technology Officer completed the system design and managed the implementation of Connexionz Core, Transit Check integration, and commissioned the hostContent Management System.
- Muskegon – The Chief Technology Officer managed the overall implementation of Connexionz Core as a

SaaS customer release along with the development of the audio-visual passenger information service

- Connexionz – The Chief Technology Officer oversees the Software as a Service (SaaS) and Internal of Things (IoT) requirements, design, architecture, and release.

Career History

Connexionz Limited | Chief Technology Officer
(Nov 2021 – Present)

Connexionz Limited | Solutions Architect
(Mar 2020 – Nov 2021)

Connexionz Limited | Lead Developer
(Mar 2019 – Nov 2020)

Ospri | Senior Contract Developer
(Sept 2018 - 2013-2018)

Ospri | Senior Developer – special solutions
(Feb 2018 - Sept 2018)

Fusion5 | Senior Consultant
(Mar 2008 – Dec 2017)

RemoteIT | Contract
(Apr 2006 – Mar 2008)

New Zealand Army | Contractor Financial Officer
(1998 - 2005)

Education

- Diploma of Photojournalism
- GCE O, A Levels London Examinations
- FA Referee

Professional Qualifications

- Business Analysis (Rational Rose)
- SQL Server Database Design and Development
- MapInfo Spatial Development
- Pivotal Development
- SAP Financial Processes
- NetSuite Scripting and customization
- Technical Mountaineering



Mike Stocks

System Engineer

Profile Summary

Mike has been with Connexionz since 2002 and has been the Research and Development Manager and Chief Engineer throughout the development of our products for the last 21 years.

Mike was first employed by Connexionz to design the ITS solution for the NSW T80 Liverpool – Paramatta transitway project. Responsible for the design of dynamic allocations for interchanges, real-time tracking system, arrival predictions, signage, and announcement systems.

Mike's professional history includes over 35 years of designing and developing software and systems for Refrigeration control and monitoring systems for food processing, storage, transport, and supermarkets.

He particularly enjoys working closely with diverse customers to understand their needs and then working with the Connexionz team to develop and deploy solutions to meet those needs.

Key Responsibilities:

Mike will be the Solutions Architect for you, managing the hardware and software requirements for the project and ensuring the architecture of our CAD/AVL system falls within the scope of this project.

Key Projects:

- Golden Empire Transit – Chief Engineer for the ITS implementation of CAD/AVL system and the deployment of related hardware.
- Tri-Delta Transit - Chief Engineer for the ITS implementation of CAD/AVL system and the deployment of related hardware.
- City of Lincoln (StarTrans) – Systems Engineer for the ITS implementation of CAD/AVL systems and the deployment of related hardware.
- Corvallis - Chief Engineer for the ITS implementation of CAD/AVL system and the deployment of related hardware.

Professional Development

- ATL & COM for C++ engineers.
- UML
- Object-orientated design, Analysis Patterns and Reuse.
- Microsoft Project.
- Basic and advanced refrigeration.

Career History

Connexionz Limited | Chief Engineer
(2002 to present)

Danfoss (refrigeration/air conditioning) | Research and Development Manager
(2000-2002)

Woodley Electronics Ltd | Project Leader
(1999-2000)

George Barker & Co (Leeds) Ltd | Senior Software Engineer
(1991-1999)

Farnell Instruments PLC (power supplies) | Production Automation Engineer
(1981-1991)

Fotherby Willis & Co Ltd | Apprentice Electronics Engineer
(1978-1981)

Education

The Open University | BSc Mathematics with Computing | BTEC
(1985-1995)

- MT365 Graphs, Networks and Design
- T395 Mechatronics
- T396 Artificial Intelligence
- M353 Topics in Software Engineering
- MST204 Mathematical Models and Methods
- M358 Relational Databases & Data Management
- M205 An Introduction to Computing
- T202 Analogue & Digital Electronics
- ST212 Basic Physical Science
- M101 Mathematics Foundation



Joey Dillon

Trainer and Customer Support Tier 1

Profile Summary

Joey has a wealth of experience in technical support roles. As a leading member of Connexionz Customer and IT support, Joey makes it his mission to ensure any incidents that arise are resolved before customers become aware of them.

Joey has a keen understanding of Connexionz hardware and software applications, and how these integrate. He uses all the systems and hardware every single day of the week, except when he's in the classroom teaching!

Key Responsibilities:

As Trainer for you, Joey will prepare the Training Agenda, providing remote workshops and onsite training for The City of Yakima trainees.

As Tier 1 Customer Support, he will provide customer support to you for all instances from initial response to resolution after the project has been deployed.

Key Projects:

- Tier 1 Customer & IT Support for Dispatch and RoutePlanner - Kayak Public Transit
- Tier 1 Customer & IT Support for Dispatch and RoutePlanner - Pigeon Forge Mass Transit
- Tier 1 Customer & IT Support for Dispatch and RoutePlanner - City of Racine
- Tier 1 Customer & IT Support for San Joaquin Regional Transit District

Professional Development

- Desktop Support
- Equipment Repair
- Field Service
- Help Desk
- Project Coordination
- Service Technician Experience
- Software Troubleshooting
- Technical and IT Support
- Microsoft Windows
- Computer Networking
- Network Support
- LAN
- Network Administration

- Operating Systems
- Microsoft Windows Server
- TCP/IP
- Disaster Recovery
- Project Leadership
- Microsoft Exchange

Career History

Connexionz Limited | Customer Support Manager (2020 - Present)

Providing customer and technical support to customers nationwide. I am involved in shipping, inventory, purchasing, and operational coordination with our staff as well as external customers.

Familiar with JIRA and creating and tracking issues within the system. Organizing and coordinating monthly, bi-weekly, and weekly meetings with customers to address any concerns or issues and provide updates from Connexionz.

Coordinating traveling arrangements with our techs for installations, troubleshooting, and site visits to resolve any issues. Provide training with our software to our customers with applicable dispatch and routeplanner software and provide ongoing support.

Scientific Games | Field Service Engineer (2018 - 2020)

Scientific Games | Technical Support (2007-2018)

Scientific Games | Systems Monitor (2006-2007)Company

Education

1987 – 1991 Army – Rank E-4

Key Competencies

- Communication– Exceptional friendly public relationship skills. Optimistic and enthusiastic
- Detail Oriented with 10 years of assisting, leading projects and deployments of software and hardware.



Marcos Mendez

Lead Field Technician

Profile Summary

Marcos joined Connexionz in 2021. He is an experienced Information Technology Specialist with a demonstrated history of working in the transportation/trucking industry. He is skilled in Electrical, Research, Electronics, and Information Technology.

Marcos's strength is in information technology focused on Computer/Information Technology Administration and Management from California State University-Northridge.

With great attention to detail and a natural problem solver, Marcos' exceptional level of versatility and his mechanical engineering and computer science knowledge make him invaluable as your lead Field Technician.

Key Responsibilities:

As Lead Field Technician for you, Marcos will ensure all hardware has been configured and tested before installation and participate in the deployment of hardware and final testing after installation to ensure it meets the Agencies and our quality assurance procedures.

Throughout your relationship with us, Marcos will provide preventative maintenance as needed to hardware and ensure all firmware is kept up to date.

Key Projects:

- City of Lincoln (SolTrans) – Senior Field Technician in ITS implementation of CAD/AVL systems and the deployment of related hardware.
- Morrow County - Senior Field Technician in ITS implementation of CAD/AVL systems and the deployment of related hardware.
- NY Waterways - Senior Field Technician in ITS implementation of CAD/AVL systems and the deployment of related hardware.

- Pierce County Washington Ferry system - Senior Field Technician in ITS implementation of CAD/AVL systems and the deployment of related hardware.

Career History

Connexionz Limited | Technical Field Engineer (2023 - Present)

Connexionz Limited | Information Technology Support specialist (2021 - 2023)

MV Transportation | Electrical/Information Technology Specialist (2015 - 2021)

Qualifications & Education

Candidate for Bachelor of Science, Computer Information Technology

- CompTIA/ A+
 - CPU, RAM, BIOS, Motherboards, Install/Configure/Troubleshoot hard drives, Configure wired/Wireless networks.
- Computer Electronics
 - Analog/ Digital circuit boards, Node, GPS, microphone, resistors, capacitors, integrated circuit chips, Switches, MOS transistors, amplifiers, diodes
- Computer Science Cyber Security I
 - Windows basics, windows networking, accounts basics, threats, vulnerabilities, and exploits, routes, domain name servers, workgroups, domains, servers, access control, authentication and basic cryptography and design of system defensive strategies

Certification

- Google IT Support Certificate
- Southern California Regional Transit Training Consortium (SCR TTC)



Pam Hesper

Field Technician

Profile Summary

Pam joined Connexionz in 2010 and has been with the company for 13 years as a Field Technician. Pam has an exemplary work ethic distilled from the USA Air Force.

Pam has significant experience installing and maintaining all our customer's vehicles and street infrastructure. She provides our technical support for vehicle installations.

Key Responsibilities:

- Ensures all hardware is ready for shipment
- Manages inventory of your assets (parts/components)
- Troubleshoots, repairs, and provides preventative maintenance to systems installed.

Key Projects:

- Lead Field Technician for the ITS implementation of CAD/AVL systems and the deployment of related hardware at Solano County Transit (SolTrans)
- Lead Field Technician for the ITS implementation of CAD/AVL systems and the deployment of related hardware at the City of Gatlinburg
- Field Technician for the ITS implementation of CAD/AVL systems and the deployment of related hardware at the City of Racine
- Field Technician for the ITS implementation of CAD/AVL system and the deployment of related hardware at New York City Ferries (NYCF)

Career History

Connexionz | Field Technician
(2010 - Present)

4. Organizational Capabilities

It is important to note that Connexionz “Experience” has great significance for us, and for our partner agencies.....not only for what we have done, but what **we have learned along the way**. At Connexionz, we have come to know that our efforts to get better, and to apply our core values into all that we do, results in better agency operations, better passenger experience, and a better Transit World. We are grateful to our customers and partners over the years for the opportunities to learn and to grow.

As some examples of this experience, = similar to Yakima Transit’s serving the City and having a strong commitment to serve a diverse and large geographic region around the area, our agency client **Kayak Public Transit** is part of the Confederated Nations of Cayuse, Umatilla, and Walla Walla.

The agency serves a large and diverse patron base. Kayak is a strong user of the Connexionz Web Applications and Mobile Applications. They need strong communications within their operations – and the Connexionz CAD/AVL platform project has been picture perfect for them.

Corvallis Transit operates 14 buses, and has responsibility for diverse patronage as well, including Passenger Counters. They were interested in improving their operational and reporting capabilities. Subsequently, they have been working to enhance their passenger experience, and Connexionz has been instrumental in helping them strategically and executing this strategy.

They now have real time passenger information, an updated website and mobile application – Video Monitors onboard the buses, and at strategic transit stations. with onboard signage. And they are continuing growth with Connexionz experience and project management.

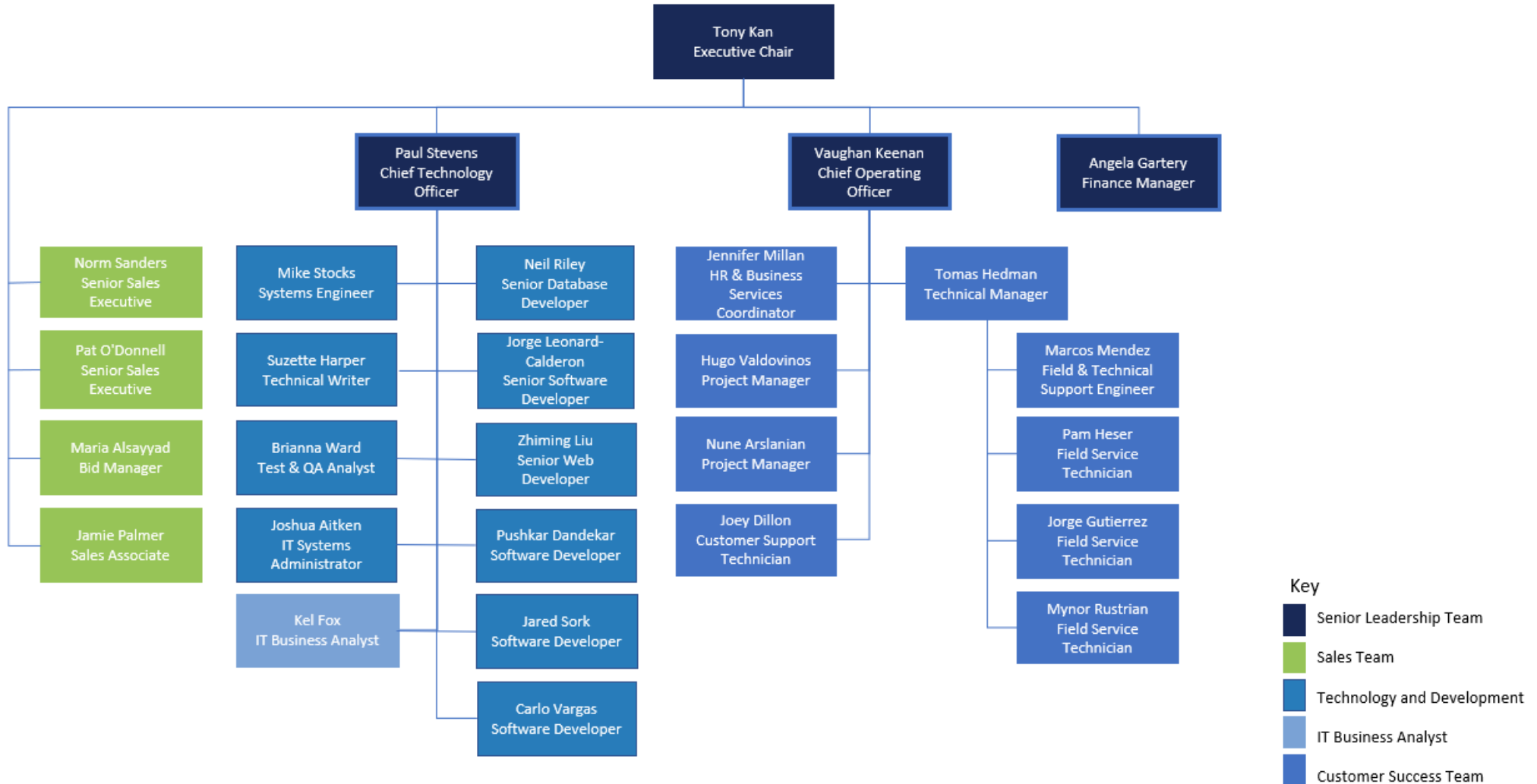
Yamhill Transit – is a very strong and similar agency client, who has been in partnership with Connexionz since 2019. With 33 vehicles in the fleet, Yamhill has incorporated the full CAD/AVL experience, and is also improving their passenger experience with Next Stop onboard signage, Voice Announcements, plus full execution of the Website and Mobile App.

With 18 vehicles, **Valley Transit in Washington State** have added features to their base CAD/AVL platform since coming on with Connexionz four years ago, including website and mobile app. In addition, like most of our other clients, Valley Transit has worked closely with Connexionz on Bus Builds.

Bus builds have been a significant event for them and many other clients, since Connexionz equipment and project management has extended WELL beyond the original CAD/AVL project. To keep strong technology after the original project, Connexionz has continued with strength in managing OEM bus builders to ensure that the agency is best served.

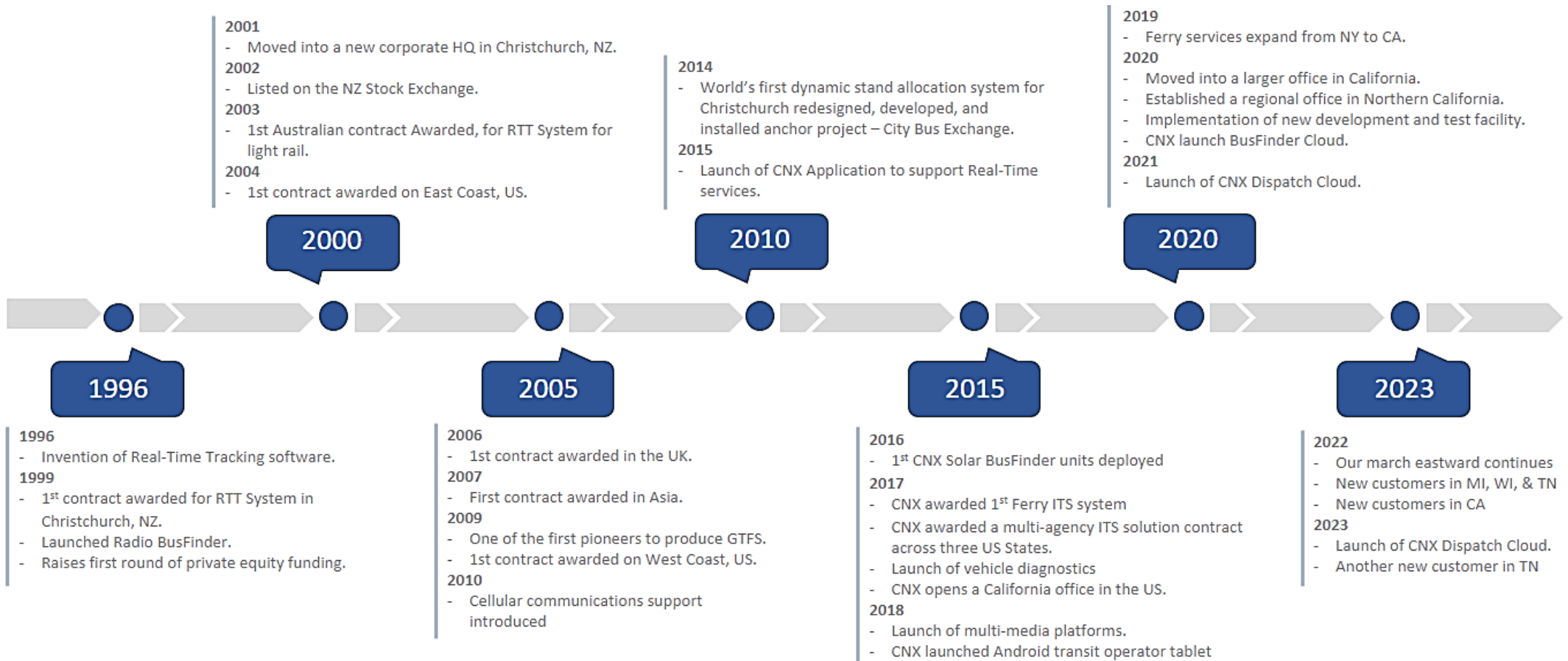
As we know, when a new bus is delivered – everyone wants to ensure that there are no delays in putting that bus in service. Connexionz has worked tirelessly with all of our agencies, step by step, through the bus build process to make sure that the vehicles are ready on DAY ONE.

Organizational Structure



5. Experience Statement

Established in 1996, Connexionz has become a world leader in fixed route CAD/AVL ITS systems. Please see below a diagram of our company history.



Connexionz remains wholly owned by a small number of shareholders located predominantly in the United States and New Zealand. Our California office is responsible for deploying and supporting the installation of Intelligent Transportation Systems into US transit agencies while our Christchurch office handles New Zealand contracts.

We design, deliver, and support end-to-end Intelligent Transportation Systems (ITS) solutions for public transport agencies globally, including design consultancy services for new bus interchange technologies. Our core ITS platform, is a Real-time Passenger Information (RTPI) system combined with a powerful Computer Aided Dispatch (CAD) system and highly accurate Automatic Vehicle Location (AVL) technology. GPS positioning systems provide agency staff with real-time bus location information and passengers with real-time service updates and arrival prediction information. A core feature of the on-vehicle ITS functionality is our advanced audiovisual Automated Voice Annunciator System.

You can find more information on what we do and how we do it through our website, see link here: <https://connexionz.com/>

As a single point of accountability, and a team that’s solely dedicated to your project’s successful deployment, Connexionz (CNX) epitomizes the adage of “the whole is greater than the sum of its parts”. We have built an incredible team consisting of dedicated hardware and software engineers, project managers, and field technicians to ensure successful project deployment with unparalleled service and support. We design, deliver, and support end-to-end Intelligent Transportation Systems (ITS) solutions for transportation providers such as yourself. **Our cloud-based solutions mean that our system will evolve as new features are added, giving you flexibility should you wish to adopt them.**

B. Describe Contractor’s relevant experience and relate that experience to your understanding of the skills necessary to complete this contract.

Over the decades CNX has successfully installed CAD/AVL hardware on hundreds of mass transit vehicles across America, ranging from large buses to cut-aways and trolleys, and even ferries. Below **we have selected a few of our current clients** that are similar to your agency and indicated the similar services we provide.

	Deployment Year	Fleet Size	CAD/AVL	MDT	APC	Engine Diagnostics	Infotainment	Website	Mobile APP
Pasadena, California	2011	45	x	x	x	x	x	x	x
Tri Delta Transit	2006	40	x		x	x	x	x	
City of Racine - RYDE Racine	2021	71	x	x	x	x		x	x
Muskegon Area Transit System	2021	28	x	x	x		x	x	x
San Luis Obispo RTA, California	2015	46	x		x	x	x	x	x
Solano County Transit (SolTrans)	2021	59	x	x	x	x	x	x	
City of Lincoln StarTran	2022	91	x	x	x		x	x	x
Kings Area Rural Transit, Hanford, California	2014	27	x		x	x	x	x	x
Yamhill County Transit Area	2019	33	x	x			x	x	x

Augmenting the CAD/AVL core has included add-on/integration of APCs (Automated Passenger Counters), AFCs (automated fare collection), AVA (Automatic Voice Announcements), infotainment, engine diagnostics, and a myriad of long-standing partner relationships for specialties such as MVS (Mobile Video Systems), NTD (National Transport Database) reporting, pre and post-trip inspections, run-cutting and more.

CNX prides itself on two very key differentiators:

- firstly, its **long-standing customer relationships** that have been renewed multiple times, which could be due in-part to the second --
- its **unique ability to play very well with 3rd party hardware and software for integration purposes**. This customization and adaptability of our services have provided our customers with peace of mind, knowing they're never "painted into a corner". With the ability to take advantage of future technologies, our customers simply don't have to worry about going to bid for a completely new system every 5 years.

Examples of contracts and experience

Intelligent Transportation System Implementation Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – 2020-RFP01

Client	Solano Country Transit (SolTrans)
Contact	Contact Name: Kristina Botsford Email: kristina@soltransride.com Phone: (707) 736 6987 Role: Deputy Director at Solano County Transit (SolTrans)
Date	Start Date: March 2021 – End Date: June 2023

Project Overview

Implementation on 65 buses. Integrated Transit Central Management System that includes, real time tracking of buses, real time arrival times for the public (available via phone, website, app,), method to share real time arrivals with developers, Automatic Passenger Counters, on board camera system, automatic destination sign changing, Computer aided dispatching, travel time analysis reporting system, contract management OTP itemized exception reports, on board audio announcements, solar powered, real time ETA e-ink displays (BusFinders) at bus stop, real time engine monitoring. This summer moving to a hosted system and adding real time passenger loads for the public.

How we did it:

- CAD – computer aided dispatch
- GPS – automatic vehicle location
- RTI – realtime passenger information
- Vehicle Hardware:
 - Fixed Route Vehicles – the following hardware will be fitted onto SolTrans’s fleet of 46 public buses(16 MCIs and 30 other buses)
 - Driver Tablets – configured with the MDT driver application and mounted to the bus via a RAM Mount, powered by ignition.
 - Medius – the Connexionz onboard computer, which enables onboard integration with VLU and AVAS

- Bluetooth Detection Hardware, tags, and power
 - Vehicle Diagnostic, which allows Real-time DTC from the CAN bus.
 - APC Systems
 - LCD System Retrofit (30 buses) – 1 per bus
 - LCD Flat Mount for front wall
 - Automatic Announcements – internal and external next stop and/or arriving at stop automatic announcements
- Demand Response Vehicles – 8 vehicles:
 - Driver tablet – configured for tracking only
- Other hardware:
 - 55' Outdoor LCD Displays (Suntronic)
 - Bay Controller Computers
 - Bluetooth Detection hardware
- Vehicle Software:
 - TransitManager Hosted Software package
 - UTA – NTD Software
 - Interchange Module
 - Connexionz Operator Tablet Software
 - Dynamic Allocation
- Integrations
 - Cradlepoint router integration
 - Integration with existing Next Stop LED Display
 - Integration with existing Headsigns
 - GFI Farebox Integration
 - Clipper Integration
 - Realtime APIs for data feeds
 - Dynamic Allocation
- Trainings
 - Onsite training (3days)
 - UTA – Onsite Training
 - Multimedia Training
 - Manuals, Documentation, System handover
- Maintenance, warranty, hosting & Support
 - 2 year annual maintenance, hosting and support – core system
 - 2 year annual maintenance, hosting and support – UTA Software

Personnel Assigned to Service/Contract (include all key personnel and identify role):

Project Manager - Nune Arslanian

Chief Operating Officer - Vaughan Keenan

Chief Technical Officer - Paul Stevens

System Engineer - Mike Stocks

Trainer and Customer Support Tier 1 - Joey Dillon

Lead Field Technician - Marcos Mendez

Intelligent Transportation System – Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – Contract No.31,918

Client	City of Pasadena Transit
Contact	Contact Name: Sebastián Andrés Hernández Email: SHernandez@cityofpasadena.net Phone: (626) 744-7661 Role: Principal Planner
Date	2021 to Present

Project Overview

Fixed Route 40 Buses, 7 local bus routes, 300 stops. CAD/AVL, Automated Voice Annunciator System (audio-visual), fleet management, Real-Time Passenger Information, smartphone applications, website, on vehicle video surveillance, Mobile Data Terminals, Automatic Passenger Counters, 120 x BusFinder Displays, yard Wi-Fi, on approximately 40 fleet and service vehicles +20 Buses, New signature for Bus Stops, Traffic Signal Priority system.

How we did it:

We were awarded the City of Pasadena Transit Intelligent Transportation System – Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – RFP in 2021.

The implementation followed our proven phased implementation approach, led by our dedicated Project Manager. The phases included:

- Project Initiation – the phase included team introductions, confirming meeting frequency and suitable dates to meet, formalizing the scope, roles, and responsibilities, confirming, and baselining the project schedule, confirming the approach to issue, risk, and change management, and creating a base set of risks, agreeing on mitigation strategies, and assigning owners
- Solution Discovery and Design – the phase included a requirements workshop, completing onsite bus stop GPS location, vehicle hardware requirements, and sign hardware requirements surveys, and the approval of the design document and hardware installation schematics
- ITS Hardware Procurement and Shipping – the phase included the procurement, configuration, testing, and shipping of all hardware
- Solution Installation and Configuration – the phase focused on the configuration and testing of the solution, including all ITS, scheduling and pre and post trip inspecting SaaS system components, routes and schedule configuration, and the customization public of website, and mobile app
- Vehicle Installation, Testing, and Sign-off – the phase included the fit-out, testing, and customer approval of all vehicles
- Training – all onsite and report training was delivered for all SaaS solutions.
- Acceptance Testing and Approval – system acceptance testing was conducted and support to operate the system was provide.

Lessons learned

Since the Connexionz solution was installed in 2013, Pasadena Transit has achieved a 12% improvement in on-time performance. The access to live meaningful data enables transit managers to make decisions on schedule and service changes, along with optimized performance.

Pasadena Transit City Planner Sebastian Hernandez said, “Prior to making any changes, we used the system to establish a base on time performance (OTP). For Pasadena Transit, on time means departing at a time point within -1 to 5 minutes of the scheduled departure time. At the time, our base OTP was 82%, with about 5% noted as leaving early. Once we began using the Connexionz system to monitor vehicle movement, our initial focus was to address early vehicle departures. This was easily accomplished with Connexionz’ user-friendly Daily Exception tool that enables us to quickly identify any vehicles not following the schedule - including vehicles running early, late, that went off-route, and other parameters we monitor.

We were able to decrease early departures immediately to less than 1% of our trips.” Pasadena Transit put their attention on very late departures to determine where they needed to make schedule adjustments in order to provide better service for their passengers. “Taking advantage of the detailed user-friendly Connexionz travel time reports we worked with the drivers to adjust the schedules to reflect the actual travel time. As a result, we have increased our on-time performance from 82% to 94%.” The reports generated from the Connexionz system have intuitive and easy route schedule planning for Pasadena transit.

Personnel Assigned to Service/Contract (include all key personnel and identify role):

- Project Manager - Nune Arslanian
- Chief Operating Officer - Vaughan Keenan
- Chief Technical Officer - Paul Stevens
- System Engineer - Mike Stocks
- Trainer and Customer Support Tier 1 - Joey Dillon
- Lead Field Technician - Marcos Mendez

Intelligent Transportation System – Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – RFP No. 21-225

Client	City of Lincoln, Nebraska (StarTran)
Contact	Contact Name: Carla Cosier Email: CCosier@lincoln.ne.gov Office: 402-441-7075 Mobile: 402-840-3135 Role: Transit Manager
Date	2021 to Present

Project Overview

StarTran has a fleet of 67 Fixed Route buses incorporating Electric, compressed, natural gas, and diesel. The scope of the project included:

Automatic Vehicle Location/Computer-Aided Dispatch includes:

- Dispatch
- Yard Management
- Analysis
- Planner

- Media Playlist
- Bus Stop Survey
- CAD/AVL system Discovery, Configuration, and testing

On-Vehicle Hardware and Functionality include:

- K86 MDT
- Medius VLU
- Cellular Router and Antenna
- Headsign Automation
- Next Stop Display Integration
- Stop Request Integration
- Duress Alarm
- Automatic Vehicle Announcements and Driver Microphone Integration
- Information Solutions/Signs
- Automatic Passenger Counters
- Bus Survey, Install Design, Procurement, Installation, and testing.

Passenger Real-Time Information

- Public Website and Mobile App
- API Data Feeds, GTFS, and GTFS Real-Time
- Website and Mobile Apps Discovery, Customization, and Deployment.

Scheduling/Planning Software Module includes:

- Optibus Planning, Scheduling, and Rostering, Operations, and Onboarding.
- Integration of Optibus Operations with Oracle Time-Keeping Software
- Optibus Scheduling + Ops, Integration with Oracle Time-Keeping Software Development, Configuration, and Testing.

Real-Time Wayside Signage includes:

- LED Displays
- LCD Displays
- E-Ink Bus Stop Sign System
- Installation, Configuration, and Testing

Pre/Post Inspection System

- TransitCheck Pre and Post Trip Inspection Software and Mobile Application
- Handheld Inspection Tablets
- Installation, Configuration, and Testing.

How we did it:

We were awarded the City of Lincoln, Nebraska (StarTran) Intelligent Transportation System – Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – RFP in 2021.

The implementation followed our proven phased implementation approach, led by our dedicated Project Manager. The phases included:

- Project Initiation – the phase included team introductions, confirming meeting frequency and suitable dates to meet, formalizing the scope, roles, and responsibilities, confirming, and baselining the project schedule, confirming the approach to issue, risk, and change management, and creating a base set of risks, agreeing on mitigation strategies, and assigning owners
- Solution Discovery and Design – the phase included a requirements workshop, completing onsite bus stop GPS location, vehicle hardware requirements, and sign hardware requirements surveys, and the approval of the design document and hardware installation schematics
- ITS Hardware Procurement and Shipping – the phase included the procurement, configuration, testing, and shipping of all hardware

- Solution Installation and Configuration – the phase focused on the configuration and testing of the solution, including all ITS, scheduling and pre and post trip inspecting SaaS system components, routes and schedule configuration, and the customization public of website, and mobile app
- Vehicle Installation, Testing, and Sign-off – the phase included the fit-out, testing, and customer approval of all vehicles
- Training – all onsite and report training was delivered for all SaaS solutions.
- Acceptance Testing and Approval – system acceptance testing was conducted and support to operate the system was provide.

StarTran and Connexionz share a primary goal of increasing ridership and confidence. Therefore, our turn-key “out-of-the-box” offer includes “StarTran” branded applications for iOS and Android. The public portal and applications include options for riders to organize very specific alerts/subscriptions for their trips. GTFS feeds are included as a standard which makes 3rd party integration simple.

We assisted StarTran in announcing the new services to the public with free “go-to-market” support that we provide alongside any new deployment. Our industry-leading infotainment system allows you to easily attach multimedia announcements to your existing stops/routes.

Lessons learned

“During Covid there were a lot of challenges with driver availability and maintenance short staffed, but we are right about where we were pre-pandemic and we’re very happy about that”. StarTran’s ridership now charts at about the same level as pre-Covid. This fact cannot be said about lots of other agencies around the country. – Nick, Assistant Manager of Operations

Personnel Assigned to Service/Contract (include all key personnel and identify role):

Project Manager - Nune Arslanian
Chief Operating Officer - Vaughan Keenan
Chief Technical Officer - Paul Stevens
System Engineer - Mike Stocks
Trainer and Customer Support Tier 1 - Joey Dillon
Lead Field Technician - Marcos Mendez

There have been ZERO contracts which have been terminated prior to the end of a contract term – ever.

6. Points Not Addressed

1 *Passenger Experience is Paramount*

The Connexionz Core Values are exemplified many ways, and our “Customer Success Team” works at the forefront of our Value System. From our Mission, and our Experience – we maintain that continuous improvement of the “passenger experience” is the bellweather indicator of how we are succeeding with our clients, and how you are succeeding with your patrons.

Yakima is looking to increase ridership by 4% over the next couple years, compared to 2022 levels. Achievement of this objective will require better passenger experience AND Exceptional Operations Effectiveness.

2 *Better Passenger Experience through Better Operations*

At the beginning of our partnership with you at Yakima, Connexionz will first enhance the Passenger Experience through our efforts with you on this project. At the same time, you will become part of the Connexionz Certification of Excellence Program, where your people will participate in industry best practices, have the opportunity to participate in Connexionz client networking and users groups.

Your Transit planning shows that you may initiate some modifications in some routes – as you are looking to have a better understanding of which routes are most effective.....Connexionz client partnership will be of great value in your efforts to make your operations better – through our experience, and our networking with other agencies with similar experiences.

3 *Better Operations through Better Technology*

This ITS project, (now called “RFP 12324P”) - for which you are looking for a partner, and Connexionz is proposing to be that partner.....will be the lynchpin for the your operational growth and effectiveness for years to come, if you make the right choice for partnership.

At Connexionz we understand this today. We understand the significance of how your decisions today will pave the way for growth and strength tomorrow. This is why we work to position ourselves for “long term value” as you consider this project. We know that growing better technology is a “Marathon” not a Sprint.

With apologies for the cliché, we know that strong planning for better technology and better operations processes must include the understanding of changeable market conditions, political policies, consumer preferences.....and even “supply chains.”

As a couple examples of “long term growth,”- with your current Camera Systems – You have “live view” capabilities – Connexionz has strong experience in maximizing the effectiveness of that live view, and improving the operations process. We have several customers who we have strong relationships with the camera systems. And we have done this over time.....as strong partners working “after” the initial project – with understanding of your needs, and your resources.

Another example, Yakima plans additional vehicle purchases – and hopefully on time. Our experience has shown that our same project people from initial work with our agencies also work with the OEMs on additional bus builds and integration. The result is better technology, and new buses which are ready to be put in effective service – immediately.

Still another example would be described under the “Alternative Fuels flexibility” category. Our customers in CA are committed to ZEV in a very aggressive manner. Other customers, like Lincoln NE, and Muskeagon MI are showing flexibility in their fleets, and Connexionz is able to work with all of them.

In short, Technology improvements make Operations better – which improve the passenger experience and will improve ridership. The most effective technology partners are ones like us – who are engaged on a daily basis with operations like yours.....and learn and grow from those experiences.

4 Flexibility – “We’re here for you!” – And we will continue to be!

A Yakima Transit slogan is “We’re Here for You!” - That is reassuring for your patrons and the community. And just as important – that mindset is also VITAL for your ITS partner to have the same assurance.

Long after our initial project is complete, – because your transit plan depends on sales tax revenue, there will need to be flexibility in your project designs, and activities. For example, bus stop improvements, passenger shelters, and other passenger experience enhancements will occur when the conditions allow.

Plus, as you are replacing vehicles, especially in our relationship with the Gillig Heavy Duty Buses in California, our experience and relationships with their folks will ensure that the project we are doing for you now – continues on your new vehicles.

Connexionz has this experience with our clients, and we will be there for you.

The Transit Technology industry continues to have turbulence, with company mergers, announcements of software no longer being supported, name changes every other month, customer support relegated to an email address or an overseas 800 number. There can certainly be reasons for concern.

Be assured - Connexionz has been serving transits for over 30 years. And we will continue with this same objective and mission. To borrow from the Yakima Slogan - **We’re here for you.**

7. Proposer References

Intelligent Transportation System – Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – Contract No.31,918

Client	City of Pasadena Transit
Contact	Contact Name: Sebastián Andrés Hernández Email: SHernandez@cityofpasadena.net Phone: (626) 744-7661 Role: Principal Planner
Date	2021 to Present

Intelligent Transportation System Implementation Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – 2020-RFP01

Client	Solano Country Transit (SolTrans)
Contact	Contact Name: Kristina Botsford Email: kristina@soltransride.com Phone: (707) 736 6987 Role: Deputy Director at Solano County Transit (SolTrans)
Date	Start Date: March 2021 – End Date: June 2023

Intelligent Transportation System – Automatic Vehicle Location (AVL)/ Computer Aided Dispatch (CAD) – RFP No. 21-225

Client	City of Lincoln, Nebraska (StarTran)
Contact	Contact Name: Carla Cosier Email: CCosier@lincoln.ne.gov Office: 402-441-7075 Mobile: 402-840-3135 Role: Transit Manager
Date	2021 to Present

8. Contract Performance Requirements

Project Implementation Approach

The success of our projects is built on the strength of our collaborative and flexible approach, efficient and effective management systems, with clear and concise communications, a focus on quality, and timely reporting.

We recognize that every project is unique, and that project management cannot be a one size fits all approach. We tailor delivery to each project's specific requirements, taking time and care to understand the functional needs, business goals, and benefits.

Connexionz will ensure a Project Manager remains your main point of contact from Notice to Proceed to Project Acceptance and consistently provides you with project updates.

We are confident that the high level of attention we give to project management is one of the main reasons Connexionz will be the best choice for The City of Yakima. Our delivery approach includes phase approvals, which act as a stage gate to confirm The City of Yakima is happy before work on subsequent project phases is undertaken.

Communication and Documentation Deliverables

Communication is essential to the success of any project, so Connexionz operates all projects in an open communications model, where our email and phones are always on. Connexionz will book weekly project update meetings with The City of Yakima to ensure the project stays on track, which will increase in frequency as critical and/or important milestones approach.

Our Project Manager will produce monthly project status reports to convey the overall health of the project, and provide an updated schedule showing all completed tasks, future tasks, and the forecast completion date, which are fantastic tools to assist The City of Yakima's project leadership to communicate project progress and health through to other interested stakeholders and management.

Appropriate project documentation is key to the success of all projects, and something we focus on at Connexionz. We believe documentation is valued highly by our customers, and for very good reason, as it helps to ensure quality through an approval process and to demonstrate appropriate process has been followed, which is a great resource to have on hand to answer questions, even years after a project is completed.

Connexionz will create the following project documentation during the project, and deliver it in electronic format to The City of Yakima's project team:

- Draft and Final Project Plan (PMP) / Schedule – project management schedule and work task breakdown structure detailing start and end dates, resources, duration, dependencies, and status.
- Draft and Final Project Charter– defines the logical, technical, hardware, and integration scope, assumptions, out-of-scope items, roles and responsibilities, project budget, and payment schedule.
- Weekly Status Calls Meeting Minutes and Actions – weekly project status meeting call minutes, and notes for current and up-and-coming tasks, action item assignments and due dates, and decisions.
- Monthly Progress Reports and Schedule Updates – project status reporting including RAG (red, amber, green) health status across scope, schedule, resource, and budget metrics, and captures tasks completed and planned tasks not completed for the reporting period, tasks scheduled for completion during the next reporting period, key discussion points overview, key issues, risks, and changes overview, payment milestone overview, and submitted invoice payment status.
- Project Acceptance Certificates – certificates submitted to the The City of Yakima for approval at the end of each project phase. Once an acceptance certificate is approved, it signifies the end of the phase and

triggers the creation of any related payment milestone invoices and the start of the next project phase or project closure, if it is the last phase.

- Issue, Risk, and Change Management Plans – details how issues, risks, and changes will be managed for the duration of the project.
- Issues, Risk, and Change Registers/Logs – registers to record all project issues, risks, and changes, which are recorded, classified, assigned, managed, etc. in line with the approved plans.
- ITS Solution Configuration and Integration Specification – includes all customer-specific system technical design information including integrations, network diagrams, configurations, customizations, and the vehicle build of materials/hardware lists and installation schematics.
- Pilot Fleet Test Plan – a plan that details what, how, who, and when for the pilot phase of the project. This document includes the approach, scope, objective/s, responsibilities, a test/design/requirements traceability matrix, and the test scripts (prerequisites, test steps, and expected outcomes) to prove the system is working as designed.
- Pilot Testing Results and Supporting Evidence – the completed test script results of the pilot testing and all related evidence, in line with the approved test plan.
- Hardware Installation Test Reports – the results of the installation testing related to each installed vehicle. These reports include pre-installation tests and outcomes and post-installation ITS functional tests and outcomes for each vehicle, including all supporting evidence.
- Training Plan – a plan that details what, how, who, and when for all project training. This document includes the approach, training schedule, contact details, roles and responsibilities, and the agenda for each training workshop, including the intended audience, required equipment, prerequisites, workshop topics and durations, and trainer details.
- Training Materials – training manuals for each training workshop.
- Hardware Warranty Certificates – certificates that detail what hardware has been installed where including serial numbers and installation dates.
- Support and Maintenance Agreement – details on how to access support, support contact details, and the related process. This document includes details on the duration of the support agreement, how incident and support request priorities are set, the target response time for each priority type, the supported system functionality and hardware included in support, and support exceptions.

Project Schedule

A detailed project schedule is on the following pages. The project schedule defines all work that must be completed to deliver the project and details the phases, tasks, start dates, finish dates, estimated duration, estimated work effort, responsible resource/s, and task predecessors.

The schedule for your project has been created based on our understanding of the project requirements and our experience delivering similar projects, which means we are confident the project can be successfully delivered in the timeframe specified.

The project schedule will be reviewed and finalized during the Project Initiation meeting and then base-lined, so the project can be appropriately tracked to ensure we meet the required dates.

Once base-lined, a project schedule can only be changed through the approved project change control process. The project schedule is a living breathing document that will be constantly maintained during the project by our Project Manager and is one of the most valuable tools used to ensure all required tasks are completed, plan for future tasks, and to track project progress and forecast completion dates.

ID	Task Name	Duration	Start	Finish	Predecessors
1	Yakima Transit RFP - AVL/ITS Implementation	111.25 days	Oct 23 '23	Mar 29 '24	
2	Project NTP	0 days	Oct 23 '23	Oct 23 '23	
3	System Design (PHASE 1 - Design Review)	15.5 days	Oct 30 '23	Nov 20 '23	
4	Project Initiation	1.5 days	Oct 30 '23	Oct 31 '23	
5	Project Charter/Scope & Schedule Review	1 hr	Oct 30 '23	Oct 30 '23	2
6	Project Risks Process Review, Identification & Owner Assignment	1 hr	Oct 30 '23	Oct 30 '23	5
7	Project Charter/Scope & Schedule Updates	2 hrs	Oct 30 '23	Oct 30 '23	6
8	Project Charter/Scope & Schedule Approval	1 day	Oct 30 '23	Oct 31 '23	7
9	Project Initiation - Complete	0 hrs	Oct 31 '23	Oct 31 '23	8
10	Solution Discovery & Design Prep	5 days	Oct 31 '23	Nov 7 '23	
11	Solution Discovery Planning & Bookings	2 hrs	Oct 31 '23	Oct 31 '23	9
12	Send Vehicle Manufacturer Schematics	5 days	Oct 31 '23	Nov 7 '23	9
13	Solution Discovery & Design Prep - Complete	0 days	Nov 7 '23	Nov 7 '23	11,12
14	ITS Solution Discovery	5.25 days	Oct 31 '23	Nov 7 '23	
15	ITS Configuration & Integration Requirements Workshop	4 hrs	Nov 7 '23	Nov 7 '23	13
16	Vehicle & Installation Requirements Survey	16 hrs	Oct 31 '23	Nov 2 '23	11
17	ITS Solution Discovery - Complete	0 hrs	Nov 7 '23	Nov 7 '23	15
18	ITS Solution Design, Review & Approval	9 days	Nov 7 '23	Nov 20 '23	
19	Vehicle Install Schematics Design & Bill of Materials Creation	3 days	Nov 7 '23	Nov 10 '23	12,16
20	ITS Solution Configuration & Integration Specification Creation	3 days	Nov 13 '23	Nov 15 '23	15FS+3 days
21	ITS Solution Configuration & Integration Specification Review	2 hrs	Nov 17 '23	Nov 17 '23	20FS+1 day,19
22	ITS Solution Configuration & Integration Specification Updates/Clarifications	2 hrs	Nov 17 '23	Nov 17 '23	21
23	ITS Solution Configuration & Integration Specification Approval	1 day	Nov 17 '23	Nov 20 '23	22
24	ITS Solution Design, Review & Approval - Complete	0 hrs	Nov 20 '23	Nov 20 '23	23
25	System Design (PHASE 1- Design Review) - Complete	0 hrs	Nov 20 '23	Nov 20 '23	17,24
26	Supply and Install AVL System Software	75.75 days	Nov 20 '23	Mar 8 '24	
27	AVL Core System Software Install, Config & Testing	75.75 days	Nov 20 '23	Mar 8 '24	
28	Dispatch Cloud & ITS System Install	3 days	Nov 20 '23	Nov 24 '23	
29	Build Hosting Environment, Install TransitManager & Dispatch Cloud, Configure & Test	3 days	Nov 20 '23	Nov 24 '23	25
30	Dispatch Cloud & ITS System Install - Complete	0 hrs	Nov 24 '23	Nov 24 '23	29
31	Stops, Routes, Stop Announcements & Schedule Configuration	15.25 days	Nov 24 '23	Dec 15 '23	
32	Stop, Route, Stop Announcements & Schedule Configuration Training Workshop	2 hrs	Nov 24 '23	Nov 24 '23	30
33	Stop, Route, Stop Announcements & Schedule Configuration	3 wks	Nov 24 '23	Dec 15 '23	32
34	Stop, Route, Stop Announcements & Schedule Configuration Support	4 hrs	Dec 15 '23	Dec 15 '23	33FF
35	Stop, Route, Stop Announcements & Schedule Configuration Complete	0 hrs	Dec 15 '23	Dec 15 '23	34
36	AVL Core System Software Install, Config & Testing - Complete	0 days	Dec 15 '23	Dec 15 '23	30,31
37	Supply and Install AVL System Software - Complete	0 days	Dec 15 '23	Dec 15 '23	36
38	Google Transit Integration	57.5 days	Dec 15 '23	Mar 8 '24	
39	GTFSS Static Integration & Google Transit Validation	1 wk	Dec 15 '23	Dec 22 '23	36
40	GTFSS- Realtime Integration & Google Transit Validation	4 wks	Feb 9 '24	Mar 8 '24	89SS+5 days
41	Google Transit Integration Support	4 hrs	Mar 7 '24	Mar 8 '24	39,40FF
42	Google Transit Integration - Complete	0 days	Mar 8 '24	Mar 8 '24	41
43	Mobile Application & Public Website Configuration & Testing	3 days	Dec 15 '23	Dec 20 '23	
44	Branded Mobile App Configuration, Deployment & Testing	16 hrs	Dec 15 '23	Dec 19 '23	37
45	Public Website Configuration & Testing	8 hrs	Dec 19 '23	Dec 20 '23	44
46	Mobile Application & Public Website Configuration & Testing - Complete	0 hrs	Dec 20 '23	Dec 20 '23	45
47	SMS Arrival & Service Alert Notification Configuration & Testing	1.56 days	Dec 20 '23	Dec 22 '23	
48	SMS Number Procurement	0.5 hrs	Dec 20 '23	Dec 20 '23	46
49	SMS Arrival & Service Alert Notification Configuration & Testing	12 hrs	Dec 20 '23	Dec 22 '23	48
50	SMS Arrival & Service Alert Notification Configuration & Testing - Complete	0 days	Dec 22 '23	Dec 22 '23	49
51	Supply and Install AVL System Hardware	30.5 days	Nov 20 '23	Jan 4 '24	
52	Hardware Procurement & Shipping	25.5 days	Nov 20 '23	Dec 27 '23	
53	Hardware Procurement & Shipping	25.5 days	Nov 20 '23	Dec 27 '23	
54	Hardware Procurement	4 hrs	Nov 20 '23	Nov 20 '23	25
55	Hardware Fulfillment & Shipping	5 wks	Nov 21 '23	Dec 27 '23	54
56	Hardware Procurement & Shipping - Complete	0 hrs	Dec 27 '23	Dec 27 '23	55
57	System Hardware Configuration, Testing & Shipping	9 days	Nov 21 '23	Dec 4 '23	
58	Medius & MDT Configuration & Testing	2 days	Nov 21 '23	Nov 22 '23	54
59	Package Hardware for Shipping	2 days	Nov 24 '23	Nov 27 '23	58

ID	Task Name	Duration	Start	Finish	Predecessors
60	Hardware Shipping	5 days	Nov 28 '23	Dec 4 '23	59
61	System Hardware Configuration, Testing & Shipping - Complete	0 hrs	Dec 4 '23	Dec 4 '23	60
62	Hardware Procurement & Shipping - Complete	0 hrs	Dec 27 '23	Dec 27 '23	56,61
63	Installation Planning & Bookings	5 days	Dec 28 '23	Jan 4 '24	
64	Installation Planning & Bookings	5 days	Dec 28 '23	Jan 4 '24	25,36,62
65	Installation Planning & Bookings - Complete	0 days	Jan 4 '24	Jan 4 '24	64
66	Supply and Install AVL System Hardware - Complete	0 days	Jan 4 '24	Jan 4 '24	55,62,65
67	Functional Acceptance Testing (PHASE 2)	40 days	Nov 21 '23	Jan 18 '24	
68	(FAT) Plan Creation	2 days	Nov 21 '23	Nov 22 '23	54
69	(FAT) Plan Creation Approval	1 day	Nov 24 '23	Nov 24 '23	68
70	(FAT) Design Creation	2 days	Nov 21 '23	Nov 22 '23	68SS
71	(FAT) Design Approval	1 day	Nov 24 '23	Nov 24 '23	70
72	Define (FAT) Vehicle	1 day	Nov 29 '23	Nov 29 '23	71FS+2 days
73	Install (FAT) Vehicle ITS Equipment	2 days	Jan 9 '24	Jan 10 '24	66FS+2 days
74	Functional Acceptance Testing Execution	5 days	Jan 11 '24	Jan 17 '24	73
75	Functional Acceptance Testing Defects and Reporting	5 days	Jan 11 '24	Jan 17 '24	74SS
76	Functional Acceptance Testing Fixes & Regression Testing	5 days	Jan 11 '24	Jan 17 '24	74SS
77	Functional Acceptance Testing Sign Off and Approval	1 day	Jan 18 '24	Jan 18 '24	76
78	Functional Acceptance Testing (PHASE 2) - Complete	0 days	Jan 18 '24	Jan 18 '24	77
79	Pilot Testing Program (PHASE 3)	10.25 days	Jan 19 '24	Feb 2 '24	
80	Define 2x Vehicles for Pilot Testing Program "(FAT) Vehicle will also be used for Pilot Testing"	2 hrs	Jan 19 '24	Jan 19 '24	78
81	Install ITS Equipment on 2x Vehicles for Pilot Testing Program	4 days	Jan 19 '24	Jan 25 '24	80
82	Begin Pilot Testing Program	1 wk	Jan 25 '24	Feb 1 '24	81
83	Pilot Testing Program Defects and Reporting	1 wk	Jan 25 '24	Feb 1 '24	82SS
84	Pilot Testing Program Fixes & Regression Testing	1 wk	Jan 25 '24	Feb 1 '24	82SS
85	Pilot Testing Program Sign Off and Approval	1 day	Feb 1 '24	Feb 2 '24	84
86	Pilot Testing Program (PHASE 3) - Complete	0 days	Feb 2 '24	Feb 2 '24	85
87	Vehicle Installation & Rollout - (PHASE 4)	23 days	Feb 2 '24	Mar 6 '24	
88	ITS Vehicle Installation & Testing - 21 Vehicles	21 days	Feb 2 '24	Mar 4 '24	
89	CNX Full ITS Vehicle Installation & Testing - 8 Hours Per Vehicle - 2 Resources	21 days	Feb 2 '24	Mar 4 '24	86
90	ITS Vehicle Installation & Testing - Complete	0 hrs	Mar 4 '24	Mar 4 '24	89
91	Vehicle Installation Road Test Sign-off	2 days	Mar 4 '24	Mar 6 '24	
92	Vehicle Installation Inspection & Road Test Sign-off	2 days	Mar 4 '24	Mar 6 '24	90
93	Vehicle Installation & Road Test Sign-offs - Complete	0 hrs	Mar 6 '24	Mar 6 '24	92
94	Vehicle Installation & Rollout - (PHASE 4)	0 days	Mar 6 '24	Mar 6 '24	90,93
95	Provide System Training	64 days	Dec 28 '23	Mar 27 '24	
96	Training Prep	5.13 days	Dec 28 '23	Jan 5 '24	
97	Training Plan Creation & Submittal	2 days	Dec 28 '23	Dec 29 '23	62
98	Training Plan Approval	1 day	Jan 2 '24	Jan 2 '24	97
99	Send User Logins to Dispatch Cloud & ITS System, & Related Training Documentation.	1 hr	Jan 3 '24	Jan 3 '24	98
100	Confirm User Access Dispatch Cloud & ITS System	16 hrs	Jan 3 '24	Jan 5 '24	99
101	Support Desk Setup	1 hr	Jan 2 '24	Jan 2 '24	97
102	Make Bookings for Training	4 hrs	Jan 2 '24	Jan 2 '24	101
103	Training Prep - Complete	0 days	Jan 5 '24	Jan 5 '24	102,97,98,99,100,101
104	Training Workshops	12.75 days	Mar 11 '24	Mar 27 '24	
105	Onsite ITS Operations & Dispatch Training	2 days	Mar 11 '24	Mar 13 '24	90FS+5 days
106	In-vehicle Hardware Maintenance Training	2 hrs	Mar 13 '24	Mar 13 '24	105
107	System Admin Training	1 hr	Mar 13 '24	Mar 13 '24	106
108	Real-time Passenger Information Systems Maintenance & Troubleshooting Training	1 hr	Mar 13 '24	Mar 13 '24	107
109	Report & Analysis Training	2 hrs	Mar 27 '24	Mar 27 '24	108FS+2 wks
110	Training Workshops - Complete	0 days	Mar 27 '24	Mar 27 '24	105,109,106,107,108
111	Provide System Training - Complete	0 hrs	Mar 27 '24	Mar 27 '24	103,110
112	Project Closure	17 days	Mar 6 '24	Mar 29 '24	
113	Requirements Compliance Review	1 hr	Mar 8 '24	Mar 8 '24	41
114	Confirm SMA & BAU Support Process, Hardware Warranty List, & Spares List	4 hrs	Mar 8 '24	Mar 8 '24	113
115	Generate Hardware Warranty Certificate	4 hrs	Mar 6 '24	Mar 6 '24	94
116	Generate Project Acceptance Certificate	2 hrs	Mar 28 '24	Mar 28 '24	110
117	Full Project Approval & Closure	1 day	Mar 28 '24	Mar 29 '24	116
118	Project Closure - Complete	0 days	Mar 29 '24	Mar 29 '24	117

Project Risk, Issue, and Change Management

Connexionz has documented risk and issue management plans, and a change control process, that will be presented and agreed to during the kick-off.

Risk Management

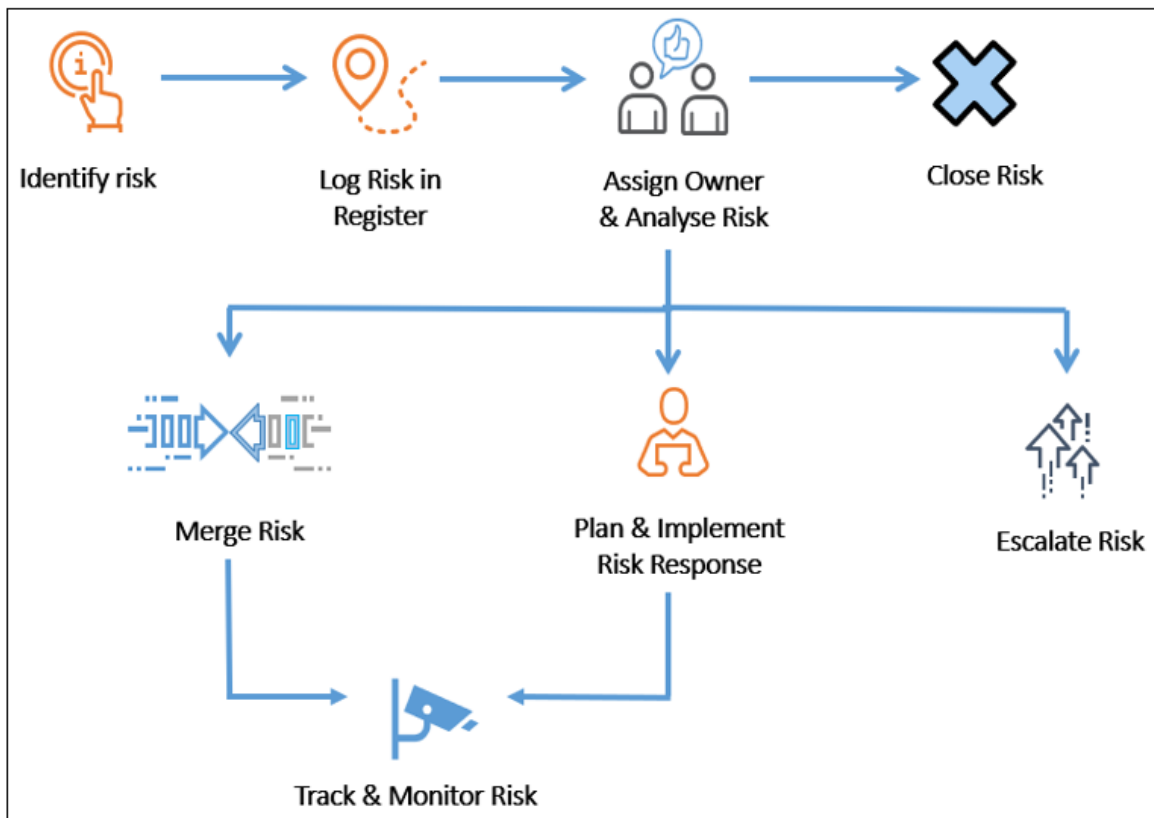
We define risk as uncertain events that, if they occur, will influence one or more project objectives.

We recognize two types of risk:

- Threats – risks that will have a negative impact on one or more of the project objectives should they occur.
- Opportunities – risks that will have a positive impact on one of more of the objectives if they occur.

Our Project Manager will present the Risk Management Plan during the Project Kick-off Meeting, which specifies who is responsible for project risk, how stakeholders and project team members will behave to mitigate the risk, the risk management process, and the parameters we use to evaluate and classify the risk.

Below is an overview of our Risk Management Process:



We recognize that the earlier risk is identified, the better it can be mitigated (threat) or enhanced (opportunity), so our Project Manager will conduct a risk workshop with The City of Yakima during the project kick-off to identify and document all possible risks into the Risk Register.

Risks will be monitored and assessed throughout the project and reported on through Project Update Meetings and Status Reports.

Below is a set of baseline risks we have identified as relevant to the project:

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
Negative media attention on the project influences public perception	Environmental	<ul style="list-style-type: none"> • Create and implement a communication management plan that includes public media announcements. • Ensure the internal team understands the communication management plan and that all public comments are directed at the identified resource/s for comment. • Identify an appropriate resource/s through which all public communication is channeled. • Ensure the internal team understands the communication management plan and that all public comments are directed at the identified resource/s for comment.
Resistance to change impacts the anticipated project benefits	Environmental	<ul style="list-style-type: none"> • Create and implement a change management plan and assign a resource to implement and report on progress. • Ensure appropriate messaging and system change information is provided to the organization's employees, customers, and other stakeholders as early as possible. • Ensure "all" employees are given exposure to the project, system, and the anticipated benefits, and that there is a forum/s for questions to be asked. • Involve employees in the project where appropriate to give them a sense of belonging and ownership. • Ensure change is driven by the top executives in the organization. • Ensure all internal employees attend training, and that internal system experts are appointed and made available to other employees. • Identify internal project champions to promote the project to the internal team. • Contract a specialist Change Management resource if required.
Poor customer engagement and buy-in negatively impact the project	Environmental	<ul style="list-style-type: none"> • Identify key customer stakeholders and set up regular meetings and touchpoints to ensure appropriate engagement and buy-in are maintained during and after the project
Another Covid-19 outbreak may hamper the ability to travel to the project location and complete the onsite project in the planned timeline	Environmental, Schedule	<ul style="list-style-type: none"> • Delay the project's go-live until all the required personnel can be onsite. • Complete the onsite tasks in a staged manner when each key resource can make it onsite.
The supplied hardware is not suitable for some vehicles	Design, Environmental	<ul style="list-style-type: none"> • Create a checklist of items to survey so nothing is forgotten and ensure the resource

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
		<p>who completes the survey uses and completes a checklist for each vehicle.</p> <ul style="list-style-type: none"> • Ensure vehicle schematics are available for each vehicle type before the survey starts so that any identified risks can be properly investigated. • Ensure that the survey resource carries example hardware for the major hardware items so suitable install locations can be identified. • Ensure adequately qualified resources perform the vehicle surveys. • Ensure the design document submitted to the customer for review and approval includes hardware placement and electrical installation schematics for each vehicle. • Ensure adequate time is provided to survey 1 of each vehicle type that is in the fleet and that the customer maintenance team is available to answer questions. • Ensure the team who performs the vehicle survey also reviews and approves the hardware placement and electrical installation schematics, and hardware Bill of Materials for each vehicle type. • Complete an audit of all hardware before shipping and as the first activity onsite before the installs begin.
<p>The ITS hardware wiring interferes with existing vehicle functions</p>	<p>Design, Environmental</p>	<ul style="list-style-type: none"> • Ensure the electrical schematics for each bus type are available, so we can confirm how to best wire each vehicle. • Ensure the design document submitted to the customer for review and approval includes vehicle installation electrical schematics for each vehicle type. • Ensure we complete pre-and post-installation vehicle functionality testing, so any existing and resulting issues can be remediated.
<p>On-vehicle hardware or installation is not fit-for-purpose for the operating environment</p>	<p>Design, Environmental</p>	<ul style="list-style-type: none"> • Use industry-proven hardware for the installation. • Complete appropriate onsite vehicle discovery to ensure the operating environment is fully understood and considered when completing the design phase. • Ensure adequately skilled and experienced resources are used for the design and installation work. • Conduct onsite vehicle hardware peer reviews. • Complete and document vehicle testing of all installed hardware.

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
Not having enough project resources and/or time to complete project work	Cost and Schedule	<ul style="list-style-type: none"> • Complete a pilot testing phase • Ensure there is adequate buy-in from top management to ensure resources are made available to complete work as required. • Ensure appropriate planning is carried out as early as possible in the project to determine the project resource requirements and send out tentative bookings to resources for all project tasks as soon as practicable. • Ensure project resources are given enough time to complete both business-as-usual and project work. • Postpone any non-urgent/critical business as usual work to allow time for project work. • Hire in contractors to fill project roles or employ temps to complete business-as-usual work to free project resources if required. • Ensure project resource requirements are considered when leave is approved. • Ensure project managers track work appropriately so any task slippage is identified as early as possible so appropriate corrective actions can be taken. • Ensure proper resource planning procedures are followed so resources are not overallocated.
Core project resources leave during the project and knowledge is lost	Environmental	<ul style="list-style-type: none"> • Ensure knowledge is shared throughout the project team. • Create appropriate documentation to capture knowledge where required. • Ensure appropriate document storage structures are set up and documentation is stored in a managed central location so that it can be easily found.
Project documentation and/or other artifacts are lost	Environmental	<ul style="list-style-type: none"> • Ensure appropriate document storage structures are set up and documentation is stored in a managed central location so that it can be easily found. • Ensure the document management system used includes automatic versioning, so inadvertent updates can be identified and backed out if required. • Ensure all project systems/platforms are appropriately backed up and have a DR plan in place. • Ensure a single resource (project manager) is responsible for documentation management, so nothing is lost between people.
Project team members do not feel adequately informed	Environmental	<ul style="list-style-type: none"> • Hold regular project update meetings (both internal and external), send out related agendas in advance, and post-meeting

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
		<p>minutes and actions to all required project team members.</p> <ul style="list-style-type: none"> • Create project status reports and distribute them to all required project team members and relevant stakeholders. • Ensure project documentation is available and accessible to project team members e.g. project schedule, project charter, design docs, etc. • Ensure project leadership is available and contactable to all project resources. • Conduct an induction meeting for all required project team members and ensure roles and responsibilities are fully understood and documented.
Project team dynamics negatively impact the project	Environmental	<ul style="list-style-type: none"> • Ensure all project team members attend an introduction meeting. • Manage time spent on the project to ensure a balance between work and other commitments. • Ensure the project team receives appropriate recognition for progress and success e.g. completing a milestone. • Create an open, respectful, and professional team environment. • Conduct regular face-to-face team project meetings. • Ensure team resources respond to one another's questions/requests in a timely manner. • Ensure an overview of the project roles and responsibilities is included in the project team induction process so everyone understands who is doing what in the project.
The project deliverables do not align with expectations and/or required quality standards	Design	<ul style="list-style-type: none"> • Hold design discovery workshops with all stakeholders that are led by appropriately skilled resources. • Ensure a solution design document is created and reviewed and approved by all stakeholders. • Ensure the solution design document contains the appropriate use of diagrams, wireframes, and descriptions to articulately describe what will be delivered. • Hold a workshop with stakeholders to ensure the solution design is understood and to provide an open forum for questions to be asked. • Provide early visibility to the customer or prototype of any product customization aspects required to deliver the project.

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
		<ul style="list-style-type: none"> • Ensure adequate work package handovers are conducted so resources know exactly what the delivery expectations are. • Build appropriate hardware and system testing checkpoints into the project schedule. • Ensure appropriate installation testing is completed and the results are recorded and submitted to the customer. • Create, review, and approve an appropriate test plan, conduct testing, and submit the results and supporting evidence to the customer for approval.
Functionality is missed during the system design stage	Design	<ul style="list-style-type: none"> • Complete a stakeholder analysis to ensure all required parties have representation during the design workshops, are consulted appropriately during the design process, and review and approve documents where required. • Ensure subject matter experts are involved in the design stage and review and approve all necessary design documents. • Ensure design workshop agendas are published in advance to give attendees adequate time to prepare. • Ensure the format of the workshops encourages participation and feedback. • Ensure the workshops are led and managed appropriately to keep attendees on topic and are focused on only the required outcomes. • Ensure there is adequate time allowed for workshops and schedule follow-up workshops if required. • Ensure there is adequate time allowed for the review of solution design documentation, • Hold a solution design review workshop to help reviewers understand the design and ask questions.
Not enough time for hardware procurement impacting the project timeline	Cost and Schedule	<ul style="list-style-type: none"> • Order all known hardware as early as possible in the project. • Ensure major hardware and known long-lead hardware items are carried in stock to ensure long-lead times do not impact the project schedule.
Vehicles are not made available for hardware installation when required impacting the project timeline	Environmental, Cost, and Schedule	<ul style="list-style-type: none"> • Schedule work outside of work hours if necessary. • Work with the customer to ensure the installation schedule is achievable. • Complete installation planning as early as possible so as much notice as possible is given to the customer to book vehicles for installations.

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
		<ul style="list-style-type: none"> Have backup/additional vehicles available for revenue service if required.
Exceeding project budget and/or timeline	Cost and Schedule	<ul style="list-style-type: none"> Implement a change management policy for the project and ensure it is understood by all required stakeholders. Complete appropriate project kick-off activities to ensure the project scope, responsibilities, budget, and schedule are understood and approved before the project begins. Ensure appropriate project reporting is in place to identify project budget and timeline impacts as early as possible so corrective action can be taken. Run as many project tasks as possible concurrently to ensure the project schedule is as short as possible. Ensure only suitably qualified and experienced resources give task estimates. Ensure estimates are reviewed by suitably qualified and experienced resources. Use previous project implementation "actual" task times to validate estimates. Ensure there is adequate work package reporting in place to identify forecast task overruns as early as possible so corrective action can be taken. Ensure oversight of all change items is included in project status reports. Set a fixed price budget and ensure changes go through the recognized change control process.
Stakeholders are not informed of current risks and may make decisions without mitigation discussions	Environmental	<ul style="list-style-type: none"> Hold a risk identification workshop with the project stakeholders at the start of the project to help identify all relevant risks.
Project risks are not captured and/or managed appropriately	Environmental	<ul style="list-style-type: none"> Implement a risk management plan for the project and ensure it is understood by all required stakeholders. Hold a risk identification workshop with the project team at the start of the project to help identify all relevant risks. Review risks during project update meetings. Ensure oversight of key risks is included in project status reports.
Issues logged and/or managed appropriately	Environmental	<ul style="list-style-type: none"> Implement an issue management plan for the project and ensure it is understood by all required stakeholders. Review issues and assign actions during project update meetings.

Risk Description (if it happens)	Risk Area	Actions to Mitigate Risk
		<ul style="list-style-type: none"> • Ensure oversight of key issues is included in project status reports.
Users do not feel that they are adequately trained	Environmental	<ul style="list-style-type: none"> • Create and implement a training plan to ensure the approach is appropriate and enough time is spent with trainees to ensure knowledge is adequately passed on. • Identify customer resources to become internal system champions and trainers. • Ensure the training resources are adequately experienced. • Ensure the training format allows attendees to ask questions. • Book in resources as early as possible so all necessary attendees can attend. • Publish an agenda so attendees know what will be included in the training so they can prep appropriately. • Provide suitable training documentation and post-training resources e.g. webinar and online training resource. • Ensure trainees remain onsite following the training and are available for post-training for questions to be asked. • Provide remote follow-up training if required.
Poor decisions are made by project resources which result in project issues	Environmental	<ul style="list-style-type: none"> • Ensure appropriate project governance is in place. • Ensure adequate project processes and reporting are set up to help identify issues as soon as possible. • Ensure appropriate delegated authority is in place so the project team knows when they 'must' escalate decisions to the next project authority.
Post Go-live Issues impact the system operation impacting the end users	Environmental	<ul style="list-style-type: none"> • Ensure appropriate documentation and training are provided to the customer admin and maintenance teams. • Ensure appropriate 24/7/365 vendor support is available to the customer. • Ensure fully trained vendor resources are available and appropriately located to quickly come onsite to resolve issues. • Implement an appropriate post-go-live support and maintenance agreement with documented service levels. • Ensure the vendor implements a "preventative" maintenance regimen to avoid preventable issues.

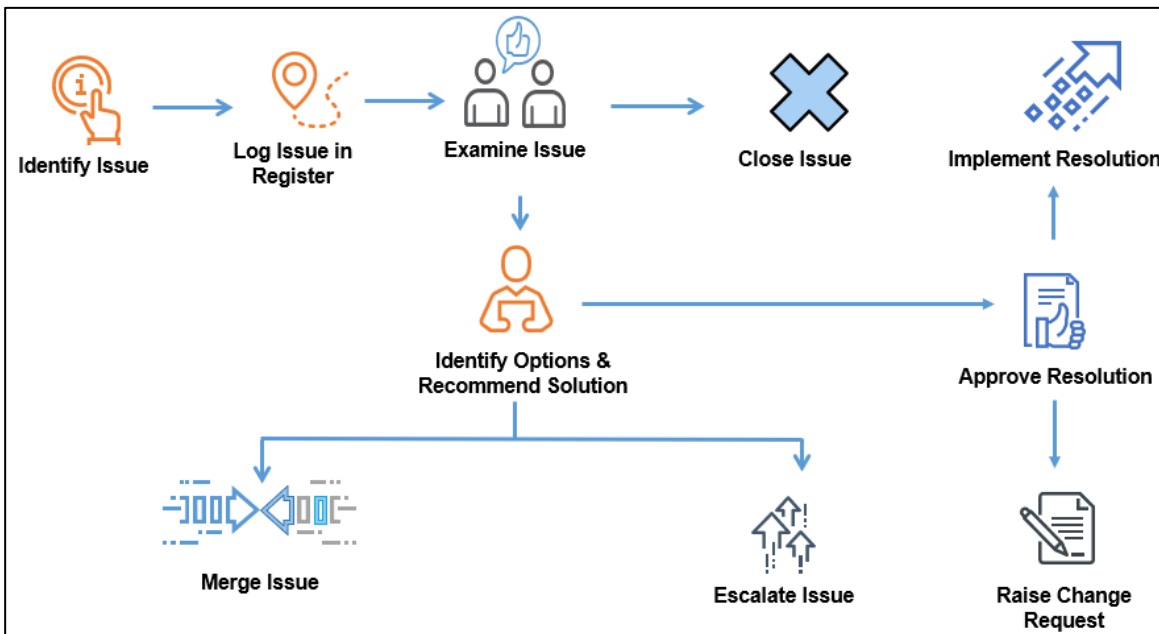
Issue Management

We define an issue as an actual event that has occurred that is impacting the project to the extent that one or more of the project’s objectives will not be met. Issues are defined as a request for change, an off-specification defect or bug, a problem, or a concern, and may be raised at any time during deployment, by any personnel.

Our Project Manager will present the Issue Management Plan during the Project Kick-off Meeting, which defines who is responsible for managing the issue, how stakeholders will behave as the issue is being managed, what the process will be, and describes the parameters used when evaluating and classifying the issue.

When an issue is raised, our Project Manager will log the issue in the project t issues register, and, with input from the project team, will prioritize and assess the severity of any issue, propose resolution options, implement a resolution, and communicate the outcome through Project Update Meetings and the Project Status Reports.

Below is an overview of our Risk Management Process:



Change Management

Changes come from any issues identified as “off-specification”.

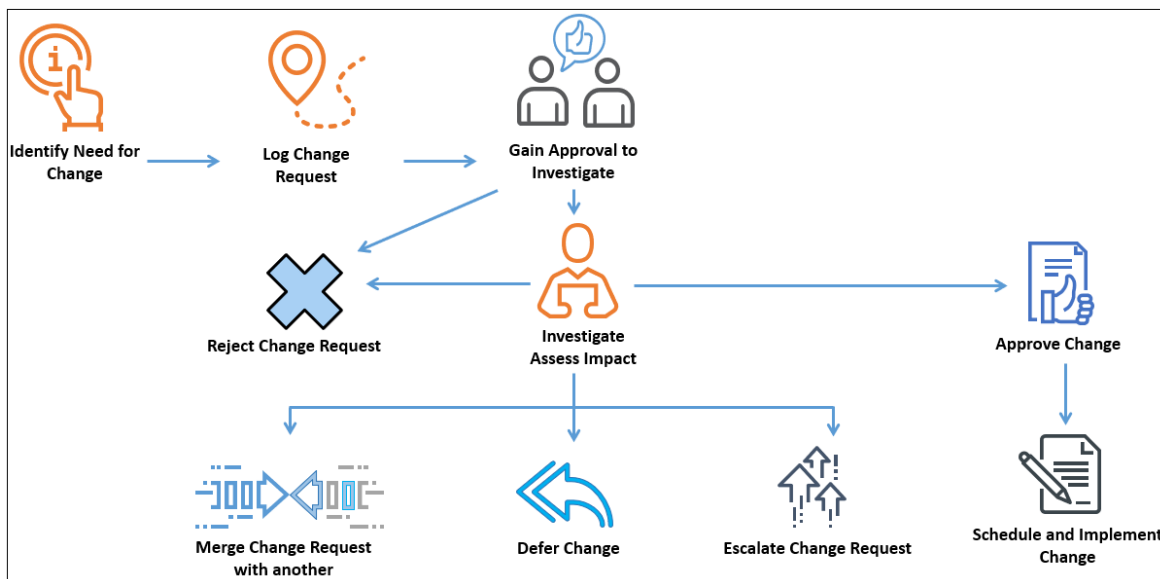
Our Project Manager will present the Change Management Process during the Project Kick-off Meeting, which defines how the Change Management Process will work for the duration of the project.

A change does not always involve additional money and can be a zero cost or result in a credit to The City of Yakima e.g., adding vehicles to the fleet would result in an additional cost, removing vehicles from the fleet would result in a credit, swapping hardware for another piece of hardware the same cost would result in a \$0 change request.

All change requests raised will be logged in the related project issues register, as a request for change, and will be discussed with The City of Yakima before being investigated. If deemed necessary our Project Manager will document and submit a change request to The City of Yakima for approval before any work begins.

The change request document will include all required information for The City of Yakima to make an informed decision on whether to approve the change request or not, such as the reason, impact, and ramifications of not proceeding with the change.

Below is an overview of our Change Management Process:



Project Quality

We believe that ensuring quality during the project is not just about meeting minimum standards, it is about delivering the best possible outcome for stakeholders, customers, and The City of Yakima. The benefits of quality extend beyond the completion of the project and contribute to long-term success and growth.

Connexionz uses various strategies to ensure quality during the project, including:

- Conducting internal Project Quality Assurance reviews, to audit that the approved project implementation methodology is being followed appropriately.
- Formalized project artifacts and processes – see the above “Project implementation Approach” and “Communication and Documentation Deliverables” sections for information on these aspects.
- Providing project phase acceptance certificates to The City of Yakima for approval and using them as a stage gate to confirm phase acceptance before progressing to subsequent project phases.
- Holding a Project Kick-off Meeting to discuss and approve the following:
 - Project Charter – to confirm the logical, technical, hardware, and integration scope, assumptions, out-of-scope items, roles and responsibilities, project budget, and payment schedule.
 - Project Schedule – to confirm the tasks required to deliver the project, the resources required to deliver each task, the effort involved to complete each task, and the estimated timeframe to deliver each phase.
 - Risk Management Plan – review and confirm the plan and related process.
 - Issue Management Plan – review and confirm the plan and related process.
 - Change Management Process – review and confirm the process.
- Running a risk workshop during the project kick-off to identify risks, agree on mitigation strategies, and assign risk owners.
- Conducting a Solution Configuration and Integration discovery workshop, documenting the findings, and reviewing it with The City of Yakima before submitting it for approval.
- Conducting onsite vehicle surveys to confirm all hardware installation requirements, documenting the findings, submitting the document for approval, and then holding a workshop to explain the document and answer questions.
- Completing hardware configuration testing before shipping hardware to The City of Yakima for installation.
- Creating a Pilot Test Plan and reviewing it with The City of Yakima before submitting it for approval.
- Completing pilot testing on two vehicles, documenting the results, collating the supporting evidence, and reviewing it with The City of Yakima before submitting it for approval.

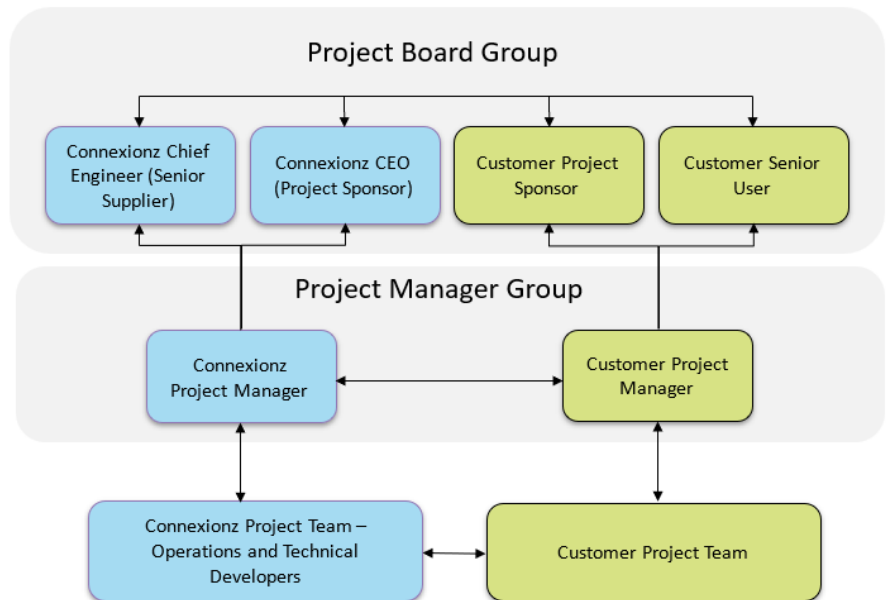
- Completing vehicle pre-installation testing and Connexionz system post-installation testing on all vehicles, documenting the results, collating the supporting evidence, and reviewing it with The City of Yakima before submitting it for approval.
- Creating a Training Plan to capture all training requirements and submitting to The City of Yakima for approval.
- Completing training in the live environment so it is more meaningful to trainees.
- Completing a project requirements compliance review with The City of Yakima to confirm that all requirements have been met and submitting a Project Acceptance Certificate before closing the project.

Vendor Roles and Responsibilities

Connexionz has two main ways of communicating vendor-specific roles and responsibilities – these are:

- Project Schedule, which defines the detailed work breakdown structure and the vendor resources required to deliver them.
- Project Charter - the Project Charter captures:
 - The detailed logical, technical, configuration, hardware, and integration scope and assigns responsibility for the delivery of each item – we do this so nothing falls through the gaps, and we can agree up-front who is responsible for what.
 - The project structure, roles, related responsibilities, and resource/s assigned to each – we do this to capture the generic “project” roles and responsibilities, which are not necessarily detailed in the scope responsibilities.

To the right is an example of the project structure we propose for the project:



Below is an example of the Roles and Responsibilities:

Role	Descriptions
Project Board	<ul style="list-style-type: none"> • Works to resolve project issues that cannot be satisfactorily addressed by the project team. • Assists with project conflict resolution. • Prioritises project goals with other ongoing projects. • Provides guidance and direction to the project, ensuring it remains within any specified constraints. • Ensures compliance with corporate or program management directives.
The City of Yakima Project Sponsor	<ul style="list-style-type: none"> • Organises and chairs Project Board meetings. • Overall responsibility for the project from a The City of Yakima perspective. • Provides business guidance to the project team. • Monitors and controls the progress of the project at a strategic level. • Determines disposition of critical high-impact issues and change requests. • Approves changes to the scope. • Ensures The City of Yakima risks are being tracked and mitigated as effectively as possible. • Serves as the City of Yakima’s top escalation point and works to resolve issues and conflicts where requested. • Ensures user The City of Yakima resources are available and resolves resource conflicts that impact the timing and quality of the project. • Constrains any user and supplier excesses. • Approves the acceptance of the project.
The City of Yakima Senior User/s	<ul style="list-style-type: none"> • Attends Project Board to provide expert advice, guidance, and input from the user perspective. • Provides expertise and input into the system design from the user perspective. • Resolves user requirements and priority conflicts. • Prioritises and contributes opinions on user decisions regarding whether to implement recommendations on proposed changes. • Promotes and maintains focus on the desired project benefits/outcome from the user perspective.
Project Manager/Lead	<ul style="list-style-type: none"> • The City of Yakima’s internal day-to-day project leader and escalation point. • Runs the weekly project update meetings in conjunction with Connexionz Project Manager. • Communicates with and supports our Project Manager. • Works with Connexionz Project Manager to resolve project issues and conflicts. • Responsible for communications to the City of Yakima project team and wider business. • Responsible for communications with The City of Yakima’s 3rd party vendors e.g. cellular provider • Manages resource allocation and scheduling for The City of Yakima’s specific tasks. • Responsible for The City of Yakima’s task deliverables and action items – including tracking and reporting. • Manages the project issues and risk registers from a The City of Yakima’s perspective. • Manages change requests received from Connexionz. • Motivates and mentors team members and provides day-to-day conflict resolution. • Reports to The City of Yakima Project Sponsor and Project Board. • Manages project invoices. • Facilitates communication between the project team and senior management. • Responsible for Organizational Change Management.

Loading Data and Data Conversion

The ITS Solution Configuration and Integration Design document will include all configuration data needed to run the system, which we will set up during the system installation, so the system is configured and ready to go for the project pilot, training, and rolling test.

During the system configuration phase of the project, we import your stop data, train your planners on how to create and maintain routes, and then support you to create all required routes ready for the pilot and go live.

No other data loading or conversion is required.

Testing

We believe project testing is essential to deliver a successful and reliable system that satisfies users and stakeholders and understand that completing it will give The City of Yakima the confidence that the purchased solution is fit for purpose.

Below are some of the key reasons why we believe project testing is important:

- Identify Issues – testing helps to identify any issues that may impact the project’s ability to meet the requirements and deliver the anticipated benefits. Early detection of defects allows our project team to address them as early as possible during the project, which helps avoid unexpected disruptions and delays.
- Ensure Software Quality – testing ensures that the project meets the required quality standards and performs as expected. High-quality software enhances user experience, increases customer satisfaction, and builds a positive reputation for the organization.
- Validate Requirements – conducting testing will enable Connexionz and The City of Yakima to validate the agreed requirements are met. By comparing the actual results with the expected outcomes, testing ensures that the project aligns with the intended goals.
- Boost Reliability and Stability – thorough testing helps ensure the delivered system is reliable and stable, which is especially important for a critical public transport system, as failures or errors could have severe consequences for the riders and The City of Yakima’s reputation.
- Risk Management – testing assists with identifying potential risks associated with the project and helps in mitigating them. By understanding the vulnerabilities and weak points, the project team can take appropriate measures to minimize potential negative impacts.

Test Plan

Our Quality Analyst will create a Pilot Test Plan and procedures to detail how the requirements detailed in the approved System Configuration and Integration Specification will be tested and proven as compliant.

The Test Plan will include the following:

- Approach.
- Scope.
- Objectives
- Resources, Roles, and Responsibilities
- Requirements, Design, and Test Traceability Matrix
- Test scripts required to confirm all functional requirements are met and the supporting evidence required to prove the results.

A Test Plan document review meeting will then be conducted with The City of Yakima to ensure understanding and to answer any questions, before submitting the document for review and approval. The City of Yakima will then be required to review the Test Plan and approve it before the project can proceed to the next phase.

Vehicle Functional Testing

Connexionz has successfully used on-vehicle video surveillance feeds in the past to complete on-vehicle functional testing, which we also intend to do for this project. This assumes Connexionz can be granted access to the video surveillance system, and that there are appropriate cameras mounted and sound available on all vehicles to facilitate the testing requirements.

Training

From experience it is prudent to provide a larger part of project time to training, particularly for individuals in anchor roles. Our value proposition is clear. We don't just deliver training - We deliver real-world, hands-on, practical education from experts who work in the transit industry for a living.

Connexionz has two decades of experience in training agencies; The City of Yakima can be assured that the Customer Success Team will work with The City of Yakima to ensure personnel is confident using CNX Core.

Our courses are developed and taught only by people who work at Connexionz and provide direct customer support, which ensures the trainers have a wealth of experience in different transit environments. All modules will encompass practical delivery methods including instructor lead overviews, demonstrations, and hands-on activities using the system.

Connexionz is happy to follow your lead and schedule training around your service operations. The optimum number per session is 6 to 8 people. Smaller classes are proven to result in better retention and more confident course participants.

Connexionz will provide hands-on training for both hardware and software as well as operational scenarios that incorporate functionality features from our system. Electronic manuals and print copies will be made available and are also available for future download from our "knowledge base" portal via the online helpdesk.

Our plan for The City of Yakima includes 2-days scheduled onsite training, which includes a fixable time allocation to assist users before they start using the system, which in our experience is when the valuable "how" type questions arise.

Connexionz will deliver remote report/analysis training once sufficient data is collated in the system, which assists The City of Yakima users in getting the most out of the training by ensuring the data reviewed is real and relevant to them. Connexionz also supplies supplementary scheduled remote courses in one-hour sessions by arrangement at no additional costs:

- **CNX Core** system overview
- Specific Software Module Training - **CNX Dispatch**, **CNX Route Planner**, **CNX Analysis**,
- Operator/Drivers Training – How to use **CNX MDT**, Overview of **CNX Dispatch** to visualize what a Dispatcher would see whilst they are in a vehicle.

Connexionz Onsite Training Needs

For successful onsite training for the Agencies, Connexionz will require:

- A room that is large enough to support the staff who are being trained.
- Comfortable seats for all staff and trainers.
- A room with HDMI-based projection is preferred.
- A Wi-Fi connection should be made available.
- For dispatch and software training – It's helpful to have supervisors bring their own laptops so they can "watch and try".

For Operator and Maintenance Training, an operating vehicle (not in service) is required with all hardware installed, tested, and in working order.

Training Plan

Our Trainer will create a Training Plan and submit it to The City of Yakima for approval before training is conducted.

The Training Plan will include:

- Approach.
- Schedule.
- Contact details, and roles and responsibilities.
- Training workshop to training guide reference.
- Agenda for each training workshop, including the intended audience, required equipment, prerequisites, workshop topics and durations, and trainer details.

Training Schedule

Our Trainer will work with The City of Yakima to develop a specific training schedule that suits the resources availability and any other operational constraints we need to work with - below is an example of a training schedule that will be produced:

Training Workshop	Workshop Total Time (Hours)	Trainees Required	Trainee Attendance Time (Hours)	Start Time	End Time
Day 1: Dec-13-2022					
Dispatch	5.5	Dispatchers	5.5	8:00 a.m.	1:30 p.m.
		Operations and Agency Management			
Connexionz Support Portal	0.5	Operations and Agency Management	0.5	2:30 p.m.	3:00 p.m.
Route & Schedule Maintenance	1	Planners / Schedulers	1	3:00 p.m.	4:00 p.m.
		Operations and Agency Management		3:00 p.m.	4:00 p.m.
Day 2: Dec-14-2022					
Vehicle MDT & Onboard Systems	4.25	Drivers	1.5	8:30 a.m.	10:00 a.m.
		Operations and Agency Management	4.25	8:30 a.m.	12:45 p.m.
Mobile App & Public Website	0.5	Drivers	0.5	2:00 p.m.	2:30 p.m.
		Customer Attention / Services personnel			
		Operations and Agency Management			
Analysis & Reporting	1.5	Operations and Agency Management	1.5	2:30 p.m.	4:00 p.m.
Trolley Hardware Installation & Maintenance Overview	1	Maintenance personnel	1	8:30 a.m.	10:00 a.m.

Training Agenda

Training Agendas provide a more detailed view of each functional and technical training workshop, so trainees know what to expect and can prepare appropriately and include the following:

- Workshop Overview.
- Participants/Intended Audience.
- Duration.
- Trainer Details.
- Training Approach.
- Prerequisites.
- Materials Required.
- Training Topics.

Our Trainer will work with The City of Yakima to develop a specific training agendas that suits resource availability and any other operational constraints we must work with - below is an example of an example of the training agendas that will be produced:

SECTION	CONTENT
Training Session Title	Connexionz Support Portal
Overview	This session will provide an overview on how the agency and operations team can log incident tickets, find ITS knowledge articles and access training videos
Participants	Operations and Agency Management
Duration	30 minutes
CNX Trainer/s	Joey Dillon – onsite
Approach	<ul style="list-style-type: none"> • The onsite trainer will lead the training session by logging on to the Connexionz support portal to demonstrate how to log incident tickets, search for knowledge articles, and where to find the on-demand training videos • The trainees will then activate their support accounts, and connect to the Connexionz support portal and use the knowledge gained to execute the functions demonstrated, with the trainer available in support
Prerequisites	<ul style="list-style-type: none"> • Agency and operations users setup in the Connexionz support portal • Agency and operations users having access to the Connexionz support por welcome email (to activate their account) • Trainees, trainer, and resources booked in
Materials Required	<ul style="list-style-type: none"> • Trainees will require access to a workstation / laptop, with access to the internet and the Connexionz support portal: https://connexionz.atlassian.net/servicedesk/customer/portal/2 • The onsite trainer will require a network connection with access to the internet and the Connexionz support portal: https://connexionz.atlassian.net/servicedesk/customer/portal/2
SESSION ONE – Route & Schedule Maintenance All Trainees	
	TIMING
<ul style="list-style-type: none"> • How to activate a Connexionz support portal account • How to request additional users to have access to the Connexionz support portal • Logging an incident • Accessing knowledge base content • Accessing training videos and the available topics 	30 minutes

SECTION	CONTENT
Training Session Title	ITS Dispatch
Overview	This session will provide an overview on how dispatchers, agency and operations teams use the system to dispatch trolleys on trips, and to communicate with drivers and riders
Participants	<ul style="list-style-type: none"> • Dispatchers • Operations and Agency Management
Duration	5 hour and 30 minutes
CNX Trainer/s	<ul style="list-style-type: none"> • Mike Stocks – remote • Joey Dillon – onsite
Approach	<ul style="list-style-type: none"> • The remote trainer will lead the training session by using the configured production ITS system to demonstrate system functions through a shared screen over Microsoft Teams • The onsite trainer will assist with training by provide onsite support to the trainees to use the system • The trainees will then connect to the production ITS system and use the knowledge gained to execute the system functions demonstrated, with the trainers available in support • During the training, the 2 pilot buses will be deployed on live trips in the system, which they will need to run, so they can be used as the bases for training
Prerequisites	<ul style="list-style-type: none"> • 2 fully tested pilot buses fitted out with ITS, AFC, and VSS hardware connected to the production systems • Production ITS system fully configured, and quality reviewed • Routes and schedule fully configured • Trainees, trainer, and resources booked in • At least one of the pilot trolleys must have run previous trips in the system so historical data can be viewed. Please note – the data should be available as part of the trolley tuning process
Materials Required	<ul style="list-style-type: none"> • Trainees will require access to a microphone and speaker-capable workstation/laptop, with access to the internet and the CNX Azure-hosted system. • The onsite trainer will require a network connection with access to the internet and the CNX Azure-hosted system. • 2 pilot buses with drivers ready to be dispatched
SESSION ONE – ITS Dispatch All Trainees	
	TIMING
<ul style="list-style-type: none"> • How to start Dispatch • Interpret the displays • Trip / Context views • Drivers • Alarms • Yard view • How to assign buses by blocks or trips • Create an assist trip • Resolve conflicting assignments • Adding and altering notes for a trip • Adjust the layouts to suit your work style • View historical trip data • Participants to trial • Overview of key learning points/ Q&A 	5 hours & 30 minutes

Training Manuals

Samples of our Training Manuals - Course content, learning outcomes, duration, prerequisite, and who should attend.

CNX DISPATCH

DESCRIPTION
Dispatch uses a database of routes, trip schedules, vehicles, signs etc. It displays real-time tracking information, so that dispatchers can see immediately the position of each bus in their system, and if necessary, take remedial action. There are many reports that can be generated from current and historical data to assist in the management of the system.

Connections will introducing Dispatch, how to start Dispatch, select data to be displayed, how to interpret the displays, and adjust layouts to suit your working style.

Routine Dispatch Operations, who deal with the common operations of tracking vehicles, make and modify assignments, add notes, receive alerts and use maps.

Maintenance Dispatch Operations, who provide maintenance to vehicles, will be able to add device configurations, statuses and testing, sign control, changes to schedules, and other less common operations.

Learning Outcomes
At the end of this module, attendees will understand:

- Manage and monitor your fleet of revenue.
- Stay aware of exceptions to service such as late/early vehicles, vehicles off-route, emergency alarms, and more.
- Ability to communicate important service information to wherever needed.
- Manage important messages and incidents reported by operators
- Track, log, and generate incident reports for the day's work

SUMMARY
Intended for dispatchers, trainers, and supervisors or anyone who is seeking a comprehensive, practical course that will equip them with the skills required to maintain the RTT Dispatch application.

Duration
1.5 Hours

An overview of the fleet in real-time tracking. Understand the icons displayed and adjust accordingly. Able to communicate important messages to drivers. Generate reports for the day's work.

Prerequisite
Commences after some of the vehicles have hardware & integrated hardware installed, when the majority are tracking, may be an option.



For more information about Connexionz contact your account manager or request via our helpdesk portal

CNX ROUTE PLANNER

DESCRIPTION
The CNX Route Planner module is used to create stops, blocks and routes. Normally used by a person in authority who is responsible for designing the routes and has input into bus blocking. The person will also have input, if not responsible for, selecting locations of signage.

The user may create, delete, and modify data relating to the services which will be monitored, including platforms, route patterns, destination groups, and many types of sign. It is also used to import schedule files, and to modify the Service Calendar.

Learning Outcomes
At the end of this course, attendees will understand:

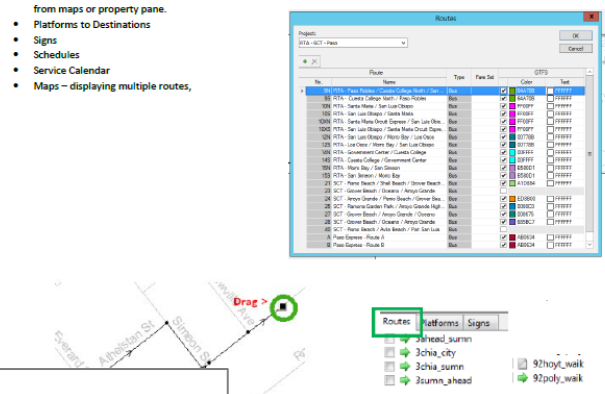
- Routes - building, changing, deleting a route
- Platforms and Platform Groups - Adding, changing, deleting a platform
- Destinations - adding, deleting destination groups from maps or property pane.
- Platforms to Destinations
- Signs
- Schedules
- Service Calendar
- Maps - displaying multiple routes,

SUMMARY
For Route Planners or anyone who is seeking a comprehensive, practical course that will equip them with the skills required to maintain the CNX Planner application.

Duration
4 Hours

The first session is training on drawing routes. The second session is revision of the first and how to allocate signs to platforms. The second session usually is after the routes have been entered.

Prerequisite
The training will be conducted after the platform survey has been completed and all geo data entered into the system.



For more information about Connexionz courses contact your account manager or request via our helpdesk portal

CNX MEDIA PLAYLIST

DESCRIPTION
CNX Media Playlist application is used to set up onboard media on the Transit Fleet. The software automatically picks up the data from CNX TransitManager and distributes to assigned fleet. This software is normally used by a person in authority who is responsible for Marketing or Public Relations and has knowledge of CNX TransitManager.

The user may create, delete, and modify data relating to the services.


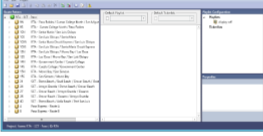
Learning Outcomes
At the end of this course, attendees will understand:

- Create Projects
- Manage the Media library
- Create Playlists
- Create Tickets Lists
- Create Next Stop Displays
- Assign List to Route Patterns
- Override specific routes
- Testing the Project

SUMMARY
Anyone who is seeking a comprehensive, practical course that will equip them with the skills required to maintain visual aide to onboard Media.

Duration
1.5 Hours

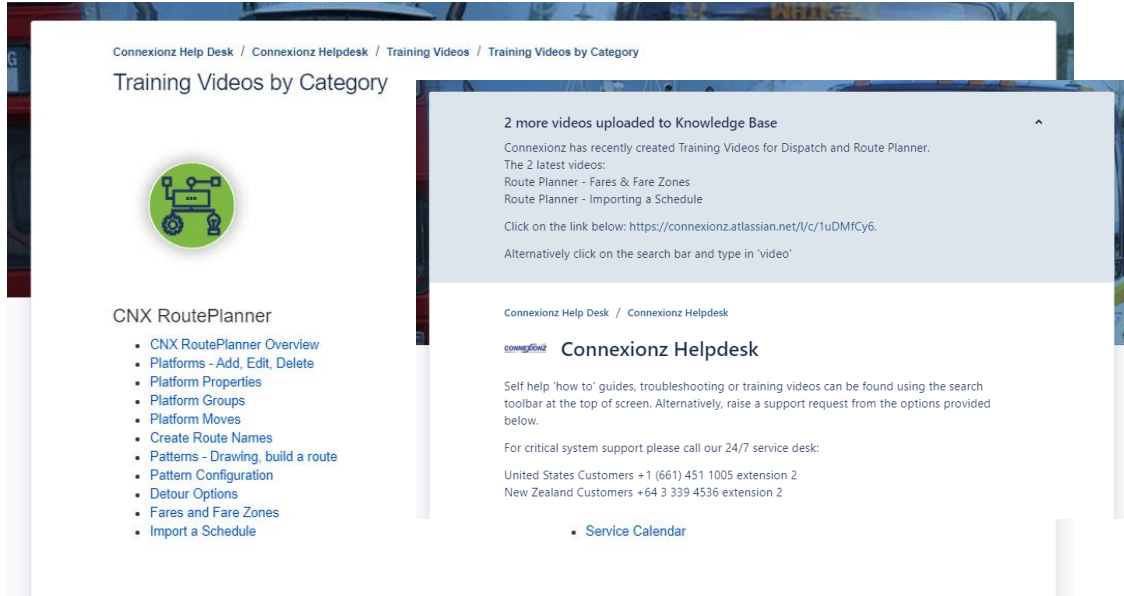
Prerequisite
The training will be conducted after the installation of onboard media and CNX TransitManager is being used in an operational environment.

For more information about Connexionz courses contact your account manager or request via our helpdesk portal

Online Training Videos

Learning at your own pace is a great way to cement the knowledge users have been taught in their courses. Training videos are available within the dispatch application, and a variety of topics are also available via our [Helpdesk Portal](#) which is available 365/24/7. Each video provides a visual and audible clip with a duration of approximately 3-5 minutes. If self-paced doesn't work for you, contact us, and schedule a free one-on-one session.



Dispatch– Help & Hints Widget

CNX Dispatch has a useful Help & Hints widget. Navigate these on your own in real-time to help users with software functionality issues.

Local time (Eastern Standard Time)
4:56 PM 11/09/2021

Messages

Help and Hints

- Trips and Schedules
- Vehicle performance chart**
- Trip actions
- Application
- Keyboard shortcuts
- Contact help desk

Vehicle performance chart

- How to find a specific location on the chart?
- How to select a range of locations?
- You can select a range of location points on the chart by **holding down the left mouse button** on the chart where you want to start, then **moving the cursor horizontally** to create an area that includes a series of chronologically consecutive location points.
- How to adjust the selected range when the chart is scaled in?
- Where can I find the list of the selected range?
- How to reset the selection?

Installations

All installation work conducted throughout the project will confirm with the following process. Connexionz has created the project schedule to include two separate installation teams, which means that two vehicles per day will be required to keep the team busy.

Please note – experience has taught us that 2 buses per day cause the least amount of disruption to an agency's revenue service, which is why we have opted to use two installation teams, however, the number of installation teams can be increased to complete the installation work faster if required.

Installation Planning & Bookings

Our Project Manager will work with The City of Yakima to book resources and vehicle installations to minimize the impact on operations as much as practicable, while still achieving a reasonable throughput on the installation line.

Vehicle Installation

Before installation begins, Connexionz will work with The City of Yakima to complete a workplace induction for all onsite Connexionz personnel, to ensure an understanding of:

- Working hours and timelines.
- Onsite communication channels and key personnel.
- The workplace layout, rules, and do's and don'ts.
- Potential dangers and risks and mitigation strategies.
- Incident and injury management processes.

Our Lead Field Technician assigned to the project will be our primary onsite point of contact during the installation phases and will:

- Manage the onsite resources.
- Manage the onsite inventory.
- Complete all quality checks and testing procedures.
- Work with The City of Yakima's Operations and/or Maintenance teams to coordinate the delivery of the vehicles to ensure the maximum throughput and minimal disruption to operations.

The installation process will involve:

- Completing a pre-installation functionality test to identify any issues prior to installation.
- Removal and disposal of all incumbent hardware.
- Installation of the hardware to the location agreed in the approved System Configuration and Integration Specification and running specific cables to the integrated hardware.
- Completion of onboard testing and turning to ensure all solution equipment is working to specification.
- Documentation of all test checklists, and serial numbers, and taking installation photographs of the installed system, as per the detailed testing methods described below.
- Site tidy and closeout.

Vehicle Testing

Connexionz will provide a Vehicle Installation and Test Plan to detail what will be tested as part of each vehicle installation - this document includes:

- A full vehicle fleet list detailing: Bus #, Make, Year, VIN#, License Plate, and the items to be installed/integrated or replaced.
- Checklists will be provided for each vehicle that will contain:
 - Pre-installation functionality test requirements and procedures:
 - This testing is completed to identify any pre-existing issues prior to installation tasks commencing and is completed to protect The City of Yakima and Connexionz from any potential disputes around issues arising directly following the hardware installation.
 - If issues are found during the pre-installation functionality tests, then they are then verified and signed off by The City of Yakima’s Lead Technical representative before installation work begins.
 - Post-installation functionality test requirements, procedures, and required supporting evidence – the tests and supporting evidence are completed to confirm the installed system is working as designed following the installation process.
 - Installed hardware serial numbers are documented – these are recorded for warranty and configuration management purposes.
 - Installation photographs are taken – these are taken to provide evidence of the installation quality.

- Operator Bus Sign-off Section:
 - Following the installation of each bus, Connexionz will request The City of Yakima’s Lead Technical representative to review and approve the installation of each bus.
 - This testing/check is completed to identify any potential issues introduced during the installation process that Connexionz needs to address, and once completed, protects The City of Yakima and Connexionz from any disputes for issues that arise following the hardware installation.

13 Appendix 5.0 - ITS Vehicle Installation Checklist

Caution:

- Report to the office on arrival and exit and wear a reflective yellow jacket and non-slip safety boots.
- Be careful when moving around - bus drivers may not be aware of your presences
- Comply with all COVID requirements

Vehicle #

13.1 Pre-installation functionality check

Hardware	Working	Broken	N/A	Make / Model / Notes
Internal Speakers - clear sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
External Speakers - clear sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Microphone - clear sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FM Radio - clear sound / mute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Headsign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Farebox Functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MDT - driver login showing in dispatch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

13.3 Post-installation functionality check

Test #	Hardware	Given	When	Expected Outcome	Actual Outcome	PASS	FAIL	N/A	Notes
1	Internal Speakers	The internal speakers have been configured to the Medius.	The diagnostics button is pressed on the Medius.	The CNX resource should hear: "This is an internal announcement, internal, external, internal"		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.1		The CNX resource is in Dispatch > Links > Device Status > Vehicle page.	They observe the vehicle they are working with.	The CNX resource should see a tick in the "NextStop" column.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Headsign	The Headsign has been configured and the CNX resource is in the Wonderweb > Monitor/Control page and enters Headsign code "1" in the Headsign Code field and presses Enter.	The diagnostics button is pressed on the Medius.	The CNX resource should see across the headsign: "OUT OF SERVICE".		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.1		The CNX resource is in the Wonderweb and enters Headsign code "1" in the Headsign Code field and presses Enter.	They observe the headsign	The CNX resource should see: "GATUNBURG WELCOME CENTER".		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.2		The CNX resource is in Dispatch > Links > Device Status > Vehicle page.	They observe the vehicle they are working with.	The CNX resource should see a tick in the Headsign column.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Farebox	The OCU app has been installed on the tablet and connected via serial port to the tablet dock.	The CNX resource configures the OCU app to be the device owner app on the tablet.	The OCU application is opened when the tablet is opened.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	MDT	MDT has been installed on the tablet.	The CNX resource is in the Wonderweb > Monitor/Control page	The CNX resource should see a response like "MDT[Bus#, dev# MDT -" with a Date, Time stamp.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.1		The CNX resource configures the MDT application with the OCU application.	The CNX resource logs into the OCU application.	MDT automatically logged in.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2		The CNX resource is in Dispatch > Vehicle folder	They observe the DriverID against the vehicle.	The CNX resource should see the DriverID entered on the OCU app appear against the vehicle.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Medius GPS	The Medius GPS has been configured and the CNX resource is in the Wonderweb > Monitor/Control page	They observe the response list	The CNX resource should see a "GPS GoodFix" response with a Date, Time stamp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.1		The CNX resource is in Dispatch > Vehicle folder	They observe the vehicle they are working with.	The vehicle should be detected (i.e., not show a "Not detected" state		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Testing Checklist – example of Connexionz ITS vehicle installation, based on lessons learned from numerous similar previous projects. Each document is checked by the Project Manager and Customer Success Lead.

Vehicle Road Test Sign-off

Following the installation of all equipment on a vehicle, Connexionz recommends that The City of Yakima's Lead Technical representative completes a road test as a final check before approving each vehicle as fit for revenue service.

This approach will give The City of Yakima the assurance that no inadvertent defects have been introduced during our installation process.

Hardware Installation Test Reports & Hardware Warranty Certificates

Our Project Manager will compile all Installation Test Reports and Hardware Warranty Certificate information ready to give to The City of Yakima at the appropriate time.

Work Plan

The following sections describe each project phase from the project schedule.

Project Award

Connexionz will work with The City of Yakima to finalize, approve, and execute documents.

Project Initiation/Kick-off

Following the Notice to Proceed, our Project Manager will setup up a workshop to introduce the core project teams, and will work with The City of Yakima to review and approve the Project Initiation documentation consisting of:

- Project Charter.
- Project Schedule.
- Quality, Issue, Risk, and Change Management Plans.

As part of this process, the project team will run a risk workshop with stakeholders to identify and document relevant project risks, define appropriate mitigation strategies, and assign an appropriate risk owner to each.

Discovery & Design

Discovery Workshop/s

Our Project Manager will work with The City of Yakima to schedule an appropriate time to conduct a requirements discovery workshop/s to confirm the functional requirements, configurations, and integrations necessary to deliver the project.

The discovery workshops will be led by our Business Analyst who will use the RFP requirements compliance matrix as the functional baseline.

Each functional requirement will be reviewed during the workshop so the necessary detail can be gathered and written up in the ITS Solution Configuration & Integration Specification.

Please note – while The City of Yakima can be confident that Connexionz has a large amount of experience with gathering transit requirements, The City of Yakima will need to ensure the correct resources from their team attend the discovery workshop/s so the best outcome is achieved.

Onsite Surveys

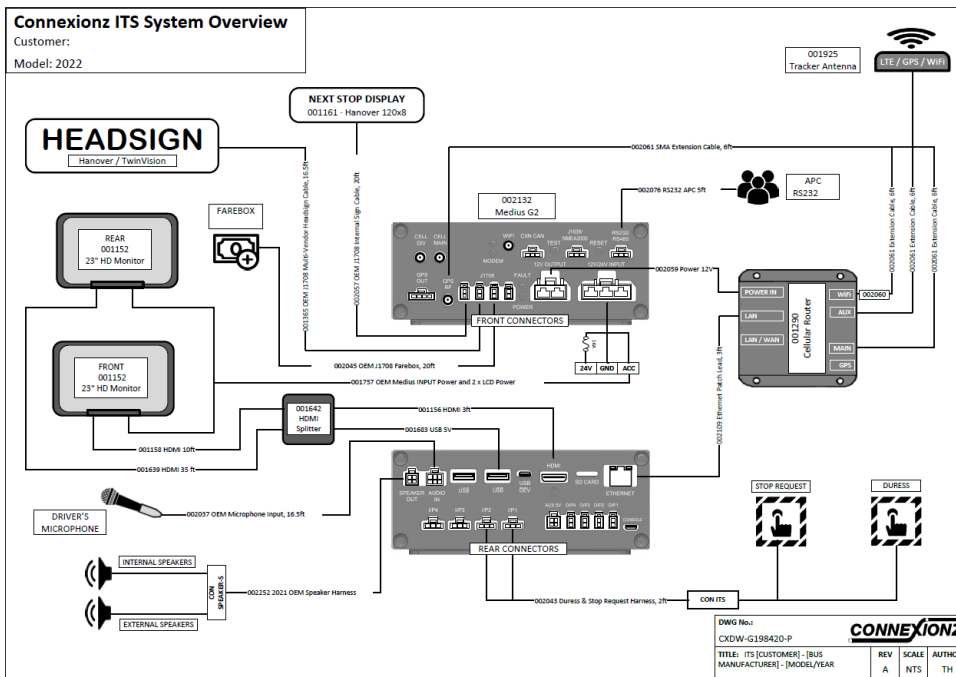
Our Lead Field Technician will work with The City of Yakima to survey each relevant bus type and year combination to confirm:

- Vehicle specifics impacting the installation e.g., vehicle voltage.
- Makes and models of existing integration hardware and the connection ports e.g., next stop and destination displays, PA systems, etc.
- Where hardware will be installed and mounted.
- Where to run cables to ensure optimal aesthetics and the safety of personnel/passengers.
- Cable lengths for integrated hardware/software components e.g.: destination displays, audio announcements, and next-stop displays.

Vehicle Design

Following the survey, our Technical Lead will create a vehicle installation schematic design diagram for each vehicle type to document how all onboard equipment included in the system will be physically connected on board each vehicle type and how it will fit into the available space.

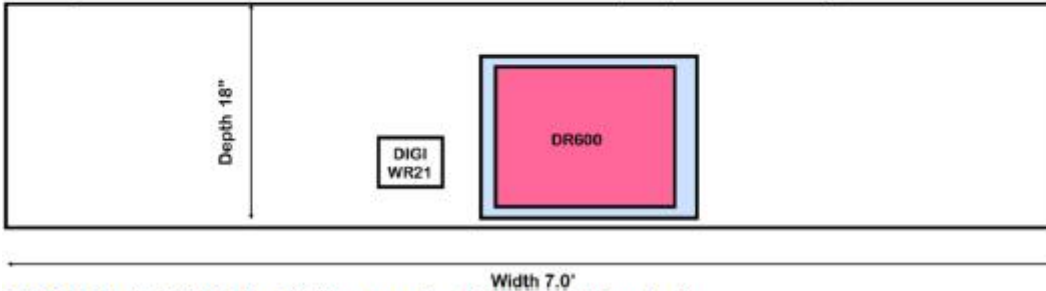
Below is an example Vehicle Installation Schematic.



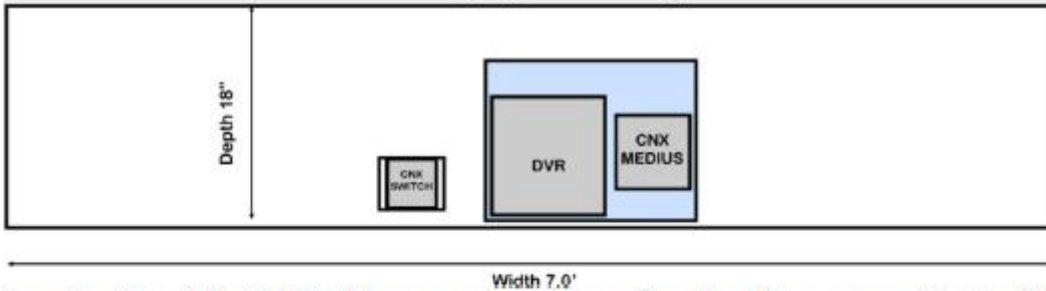
Below is an example Installation Location Design Diagram:



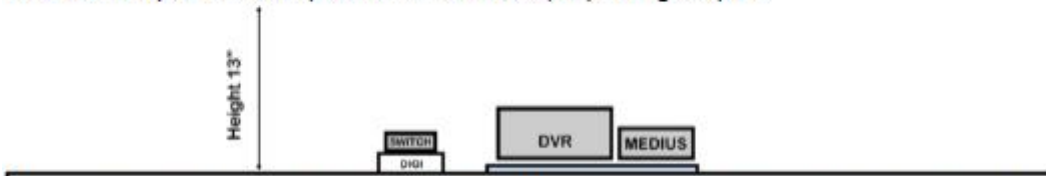
Existing DR600 and DIGI WR21 Router installation overview (TOP, scaled drawing)



CNX Medius & REI DVR installation overview (TOP, scaled drawing)



Procedure: The existing DR600 will be removed, and its mounting plate will be repurposed for the CNX Medius and REI DVR keeping the DIGI WR21 Router. The CNX 5-Port Switch will be “piggyback” mounted on top of the Cradlepoint Router or Medius, depending on space



Please Note - Cabinet sizes differ. Eg: 2016 Trolley (18 inches deep, 13 inches tall, by 8 foot long) & 2019 Trolley (20 inches deep, 15.5 inches tall, by 7Foot 1 inch).

For these illustrations the smallest of all these dimensions have been used: 18” x 13” x 7’

Vehicle and Display BOM

Our Technical Manager will use the installation schematics to create a hardware Build of Material (BOM) for each vehicle type, so our Procurement Team can order all required hardware.

The Vehicle Schematics and BOM documentation safeguard The City of Yakima for when replacement or additional hardware is required, as all pertinent information will be readily available.

Vehicle BOM Example:

A	B	C	D	E	F	G	H	I	J	K	L	M
Deploy Date:						Type						
Connexionz ITS Item Hardware List						Model	2022 MCI D4500	2022 MCI D4500	2022 MCI D4500	2022 MCI D4500	2022 MCI D4500	
						Fleet #						
Bill Of Materials & Pick List												
Item	Description	CNX Info	Notes	NF PO#	NF PN#	Total Qty	Q	Q	Q	Q	Q	Q
Medius Configuration												
002132	Medius G2, Multimedia, WiFi, TTS	Y		70024329	952973	5	1	1	1	1	1	
Medius Power Option												
001164	Medius INPUT Power Pigtail 300mm	Y			953036	5	1	1	1	1	1	
External Router												
001454	Cradlepoint IBR900	Y	Provided by SolTrans									
External Router Power												
001759	Medius OUTPUT Power 12V for Router (Cradlepoint), 50cm	Y		70024329	07-12-9910	5	1	1	1	1	1	
Antennas												
001819	Panorama IN1958-W 5-in-1 'Great White' MiMo, LTE/GPS/WiFi Dome Antenna Kit, 16ft	Y				5	1	1	1	1	1	
002246	GPS ANT 1.592GHZ Puck SMA Male, 3m (10ft)	Y			957196	5	1	1	1	1	1	
001103	GPS Cover Dome	Y			938878	5	1	1	1	1	1	
Antenna Extensions & Adapters												
002061	SMA/Female to SMA/Male Extension Cable, 6ft	Y	For GPS Only only use if required		938916	5	1	1	1	1	1	
Network Devices												
002080	5-Port Ethernet Network Switch	Y		70024329	953053	5	1	1	1	1	1	
Network Switch Power												
002125	USB Power for Switch A Male to DC Barrel - 1.35mm ID, 3.5mm OD, 3ft	Y		70024329	957786	5	1	1	1	1	1	
Network Cables												
002109	Ethernet Patch Lead, 3ft	N/A	Medius - Switch - Router	70024329	938677	10	2	2	2	2	2	

Solution Design Creation, Review & Approval

Connexionz will take the findings from the discovery workshops and onsite surveys and create an ITS System Configuration and Integration Specification, which will document how the system will meet the functional and hardware installation requirements.

The ITS System Configuration and Integration Specification will include details on how the solution will fulfill each functional requirement, and includes details on:

- Integrations.
- System Architecture and Network Diagrams
- Configurations.
- Customer-Specific Customizations.
- Vehicle and Display BOM and Installation Schematics.

A specification review meeting will be conducted with The City of Yakima to ensure understanding and answer any questions, before submitting the document for review and approval.

The City of Yakima will then be required to review the ITS System Configuration and Integration Specification and approve it before the project can proceed to the next phase.

This document will then form the functional requirements baseline for the project against which testing will be conducted.

Hardware Procurement, Configuration, Testing, & Shipping

Following the approval of the design specification, all hardware will be ordered and shipped to our offices ready for configuration, testing, and shipping.

Connexionz will fully build and configure all hardware and conduct quality testing by connecting it to a factory test system and running it through a series of static functional tests to ensure the hardware and software are functional as expected.

Any defects are identified during the testing and will be remediated before being shipped to The City of Yakima.

The static tests conducted include:

- GPS Positions.
- Next Stop Display Integration.

- Announcements.
- MDT Connectivity.
- Passenger Infotainment.

Please note – it is not possible to complete full end-to-end connectivity testing against all integrated hardware, as some hardware items may are not available e.g., a customer configured Destination Display.

Below is the Vehicle Hardware Factory Test System:



Following the vehicle hardware configuration and factory testing, Connexionz will package all relevant hardware into vehicle-specific installation bags, record all required serial numbers, and then ship them to The City of Yakima ready for the installation teams.

Our Project Manager will keep The City of Yakima informed and provide you with the shipping details, so the shipment can be appropriately received and securely stored until the installations being.

System Installation, Configuration, & Testing

Dispatch Cloud & ITS System Install

Our technical team will build The City of Yakima environment and configure and test it in line with the approved System Configuration and Integration Specification.

The installation process includes testing the configured system by our quality team to confirm the system is configured and working correctly.

Stop, Route, Stop Announcements & Schedule Configuration

Our Trainer will provide Route Planner training to The City of Yakima's Transit Planners on how to configure stops, routes, stop annunciation/text-to-speech, destination sign automations, and upload a schedule ready for use in the system.

As part of the training, our Trainer will assist the Planners to create real route examples, so the Transit Planners have references on which to configure the complete system.

By working with the Transit Planners and facilitating them to create their own stops, routes, stop announcements, designation sign automations, and schedule, we aim to give The City of Yakima the tools necessary to be completely self-sufficient for all future route creation and maintenance activities.

Following the training, the Transit Planners will be allocated three weeks to create all required configurations, with Connexionz providing guidance and route quality assurance for the duration of the process.

Mobile Application & Public Website Configuration & Testing

Our technical team will customize and test the mobile application and website in line with the approved ITS System Configuration and Integration Specification, and then deploy them ready for end-user use.

Google Transit Integration

As soon as the routes are configured and the schedule has been imported, Connexionz will work directly with Google Transit representatives to answer all questions required to validate and integrate the GTFS static data feed with Google Transit.

Following the approval of the GTFS static data and fit out of the first four vehicles, Connexionz will again work with Google Transit representatives to answer all questions required to validate the GTFS real-time data feeds, which is the last step required for full Google Transit integration.

If necessary, Connexionz will also work with The City of Yakima and guide them through the Google Transit registration process to set up an agency account, which is required before GTFS integration with Google Transit can begin.

Pilot Fleet Testing Test Plan Creation & Approval

Please see the “Testing” section above for the details about the Pilot Fleet Testing Test Plan creation and approval process.

Pilot Fleet Installation, Testing, & Approval

Pilot Fleet Installation Planning & Bookings

Following the approval of the Pilot Fleet Testing Test Plan, our Project Manager will initiate the planning and booking phase for the Pilot Fleet Installation & Testing.

Please see the “Installations” section above for the details about the installation planning and booking process.

Pilot Fleet Vehicle Installation, Testing & Sign-off

The installation of the two Pilot Fleet vehicles is expected to take 2 days to complete from start to finish.

Please see the “Installations” section above for the details about the installation process, testing, and approval processes.

Pilot Fleet Acceptance Testing & Approval

Following the fit-out and approval of the Pilot Fleet, our Quality Analyst will take responsibility in conjunction with the onsite Lead Field Tech for dispatching the Pilot Fleet onto trips and conduct Pilot Fleet Testing using the fully configured Connexionz system in line with the approved Test Plan.

To facilitate Pilot Fleet Testing, Connexionz will provide The City of Yakima with an incident report template for drivers/supervisors to use to report any system incidents experienced onboard vehicles, so they can be investigated.

During Pilot Fleet Testing, our Project Manager will track all reported issues through the project issues register and will meet with The City of Yakima as often as necessary to ensure all outstanding issues are resolved.

Following the completion of the Pilot Fleet Testing, our Quality Analyst will create a test summary report and collate all test results and supporting evidence (screenshots, videos, reports, etc.) and upload them to a SharePoint site and then share the site with The City of Yakima.

Our Quality Analyst will then set up and facilitate a review meeting to take The City of Yakima through the results to ensure understanding and answer any questions. The City of Yakima will then be required to review the test report and supporting evidence and approve it before the project can proceed to the next phase.

Full Fleet Installation & Testing

Full Fleet Installation Planning & Bookings

Following the approval of the Pilot Fleet Testing approval, our Project Manager will initiate the planning and booking phase for the Full Fleet Installation & Testing.

Please see the “*Installations*” section above for the details about the installation planning and booking process.

Full Fleet Vehicle Installation, Testing & Sign-off

The installation of the Full Fleet vehicles is expected to take 11.5 days to complete from start to finish.

Please see the “*Installations*” section above for the details about the installation process, testing, and approval processes.

Hardware Installation Test Reports & Hardware Warranty Certificates

Our Project Manager will then compile all Installation Test Reports and send them to The City of Yakima for approval and complete the Hardware Warranty Certificate information ready to hand over to The City of Yakima at the end of the project.

System Training

Training Prep

Following the approval of the Pilot Fleet Testing, our Project Manager will begin the planning and booking phase for the System Training.

Our Trainer will create the Training Plan and submit it to The City of Yakima for approval – please see the “*Training*” section above for the details about the Training Plan.

As part of the Training Prep, our Project Manager will:

- Send The City of Yakima user login details for access to the system and confirm the users can access the system.
- Send all required Training Documentation.
- Set up all required users with access to our Support Desk.
- Coordinate all required training bookings and prerequisite tasks.

Training Workshops

Our Trainer will arrive onsite at The City of Yakima to run the training workshops in line with the agreed Training Plan – the training workshops included are as follows:

- Operator Training
- Dispatcher and General User Training
- Vehicle System Component Maintenance & Diagnostics Training
- System Admin Training
- Report & Analysis Training

Please see the “*Training*” section above for the details about the Training.

14-Day Rolling Test, Support, & Project Closure

14-Day Rolling Test & Support

Following Training, The City of Yakima will operate the full system on a day-to-day basis for 14 days, with our project team providing support.

During 14-Day Rolling Test, our Project Manager will track all reported issues through the project issues register and will meet with The City of Yakima as often as necessary to ensure all outstanding issues and/or questions are resolved.

Project Closure

Following the approval of the 30-Day Burn-In period, our Project Manager will work with The City of Yakima to:

- Confirm the Service and Maintenance Agreement.
- Introduce the Connexionz Customer Support resource.
- Provide all warranty information, including serial numbers and installation locations.
- Provide a listing and serial numbers of any spare hardware included in the project.
- Confirm full compliance with the specification.
- Present the Project Acceptance Certificate for approval before officially closing the project.

9. Questionnaire

VIII. REQUIRED FORMS

PROPOSER: Connexionz PROPOSER QUESTIONNAIRE

COMPLETE AND UPLOAD WITH PROPOSAL

INSTRUCTIONS: Provide the requested information, sign and date. If the Owner requires further description, the Owner may request Proposer to provide such information within a mandatory due date. You must complete this form and upload it with your Proposal. Failure to submit this form fully complete, may result in disqualification of Proposal.

PROPOSER INFORMATION

Proposer's Legal Name: Connexionz Limited

Company's dba: (if applicable) _____

CEO/President

Name: Tony Kan

Business License No. _____ UBI No. _____ Federal EIN No. 98 - 0441396

Phone (661) 568 6274 Toll Free Phone ()

FAX () E-Mail Address tony.kan@connexionz.com

Mailing Address 27720 Avenue Scott, Unit 190, Santa Clarita CA, 91355, United States

City Santa Clarita State CA Zip + 4 91355

Physical Address 27720 Avenue Scott, Unit 190, Santa Clarita CA, 91355, United States

City Santa Clarita State CA Zip + 4 91355

Name the person to contact for questions concerning this proposal.

Name Tony Kan Title Executive Chair

Phone (661)568 6274 Toll Free Phone ()

FAX () E-Mail Address tony.kan@connexionz.com

Mailing Address 27720 Avenue Scott, Unit 190, Santa Clarita CA, 91355, United States

City Santa Clarita State CA Zip + 4 91355

Physical Address 27720 Avenue Scott, Unit 190, Santa Clarita CA, 91355, United States

City Santa Clarita State CA Zip + 4 91355

PROPOSER: Connexionz Limited

OWNERSHIP

Is your firm a subsidiary, parent, holding company, or affiliate of another firm? Yes: _____ No: - _____

Please explain: _____

FINANCIAL RESOURCES AND RESPONSIBILITY

Within the previous five years, has your firm been the debtor of a bankruptcy? Yes: _____ No: - _____

Please explain _____

Is your firm in the process of or in negotiations toward being sold? Yes: _____ No: - _____

Please explain _____

Within the previous five years, has your firm been debarred from contracting with any local, state, or federal government contract? Yes: _____ No: - _____

Please explain _____

Within the previous five years, has your firm been determined to be a non-responsible bidder for a proposal for any government contract? Yes: _____ No: - _____

Please explain _____

Within the previous five years, has a governmental or private entity terminated your firm's contract prior to contract completion? Yes: _____ No: - _____

Please explain _____

Within the previous five years, has your firm used any subcontractor to perform work on a government contract when that subcontractor had been debarred by a governmental agency? Yes: _____ No: - _____

Please explain _____

DISPUTES

Within the previous five years, has your firm been the defendant in court on a matter related to any of the following?

- Payment to subcontractors? Yes: _____ No: - _____

Please explain _____

- Work performance on a contract? Yes: _____ No: - _____

Please explain _____

Does your firm have any outstanding judgments pending against it? Yes: _____ No: - _____

Please explain _____

Within the previous five years, has your firm been assessed liquidated damages on a contract? Yes: _____ No: - _____

Please explain _____

Has your firm received notice of and/or in litigation about patent infringement for the product and/or service that your firm is offering to the City? Yes: _____ No: - _____

Please explain _____

COMPLIANCE

Within the previous five years, has your firm or any of its owners, partners, or officers, been assessed penalties or found to have violated any laws, rules, or regulations enforced or administered by a governmental entity? *This does not include owners of stock if your firm is a publicly traded corporation.* Yes: _____ No: - _____

Please explain _____

License(s) are required to perform the services sought by this solicitation. Within the previous five years, has your firm had a license suspended by a licensing agency or been found to have violated licensing laws? Yes: _____ No: - _____

Please explain _____

PROPOSER: Connexionz Limited

PROPOSER QUESTIONNAIRE

BUSINESS INTEGRITY

Is a governmental entity or public utility currently investigating your firm for false claims or material misrepresentations?

Yes: _____ No: - _____

Please explain _____

Within the previous five years, has a governmental entity or public utility determined your firm made a false claim or material misrepresentation?

Yes: _____ No: - _____

Please explain _____

Within the previous five years, has your firm or any of its owners, partners or officers been convicted of a crime involving the bidding on a government contract, the awarding of a government contract, the performance of a government contract, or of a crime of fraud, theft, embezzlement, perjury, bribery? *This does not include Owners of stock if your firm is a publicly traded corporation.*

Yes: _____ No: - _____

Please explain _____

Tab - Re on e to Te hni a
Re uire ent



Tab 5- Response to Technical Requirements

Compliance Matrix

Code	
C	Compliant
N	Non-Compliant
CM	Compliant with modifications
D	In development, pilot, or prototype
R	Roadmap

RFP Section	Description	Code	Responder Notes
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V. TECHNICAL REQUIREMENTS

	<p>Responses to each requirement must indicate that the Proposer either “does comply” with the requirement or “does not comply”. No explanation is required, as non-compliance with any of the following requirements will result in proposal rejection and remove that Proposal from further consideration.</p> <p>If Proposer feels the Mandatory Proposal Requirements are proprietary, contact the Buyer listed on the Signature Sheet to determine if requirements should be changed.</p>		<p>In section III, 2 of your RFP you state: “Provide a point-by-point response to each requirement specified in Section V, Technical Requirements of this RFP. Responses to requirements must be in the same sequence and numbered as they appear in this RFP. State whether if you comply 100% with that particular specification, or indicate that you do not comply 100% and explain how your product/service deviates. Deviation on any item will not necessarily disallow proposal. The Owner shall be the sole judge as to whether a deviation/exception is acceptable, or not.”</p> <p>We have chosen to believe that this statement will prevail over the text to the left.</p> <p>Just as no two students who have been set the same assignment will write an identical essay, no two vendors setting out to design an intelligent transport system will do it exactly in the same way.</p> <p>Our many customers will attest to how easy our system is to use, the time they save and the fantastic customer service we provide for many years after their successful deployment. We won’t leave you high and dry.</p> <p>It is on this basis that we have responded to your RFP.</p>
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1. FUNCTIONAL REQUIREMENTS

	A. The selected Contractor shall provide hardware, all brackets, nuts, bolts, connectors, and all integration and installation necessary to provide a fully	C	Connexionz will provide all equipment and hardware needed for project completion.
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	operational system for each vehicle.		
	B. The project management services to be provided include, but are not limited to, those related to management and coordination of ITS component compatibility, testing of installed ITS equipment to ensure proper functionality, and other functions as needed in the successful deployment of ITS components.	C	Our Core Competency and our Company Mission is shared with respect to ITS Project Excellence. Yakima will receive the very best quality outcomes in ITS through coordination, compatibility, testing, and functionality of our solutions throughout our partnership.
	C. Specific responsibilities of the successful proposer will include, but will not be limited to, the following:		
	1. Coordinate the installation of, or if so requested by City of Yakima, physically install, ITS components (hardware and software) on fixed route vehicles.	C	Our Customer Success Team has dedicated project managers who put together the implementation plan included in the body of this proposal. The plan includes agreeing on a schedule of regular and frequent project meetings, equipment procurement, installation, testing, and acceptance processes. We will coordinate all installation with your team with regular communications, meetings and time frame agreements. Our team has considerable experience physically installing and testing the equipment we supply you on a diverse range of transit vehicles.
	2. Testing of ITS components before, during, and after installation to ensure proper functionality.	C	All proprietary hardware is tested prior to being shipped. As various components are installed, they are tested before we move on to the next component. Once a complete subsystem has been installed, the entire subsystem is tested before moving onto the next. In this way, we can ensure that the chances of having to return and remediate an issue is minimised, saving us time and money whilst maximising the likelihood that you will have a successful deployment. This methodology is the result of many years of lessons learned from deploying similar systems required by you.
	3. Ensure compatibility and coordination of effort and information between the various ITS components (e.g.	C	Our system plays well with commonly encountered third-party hardware within the transit industry using the J1708 standard.

	Single-button settings, shared GPS, wireless communications, etc.)		We also have a strong record of successfully integrating various technologies, both hardware and software, into our ITS system.
	4. The proposed solution will be a cloud solution. The Contractor must supply all hardware, operating system software, application software and applicable licensing to support the appropriate number of users.	C	<p>Our system is fully hosted in the cloud and all features you purchase will be automatically updated to the latest functionality when new versions become available.</p> <p>We will provide all hardware, software, and services to meet your requirements.</p> <p>We will act as a prime contractor and will be fully responsible for the sourcing, supply, deployment, documentation, testing, training, documentation, and 24/7 support of your new ITS system, whether the components are hardware or software and in the cloud or on your vehicles.</p>
	5. All hardware, purchased or replaced, must be new, compatible and successfully and seamlessly interface with the current software.	C	<p>All the hardware we supply will be new, not second-hand or used. All our proprietary hardware is tested before it is shipped onsite.</p> <p>Our manufacturers test any third-party equipment before they leave the factory. All the equipment models we supply have given many years of good reliable service amongst our customers.</p>
	6. All hardware installed on the vehicle must be able to withstand the harsh environment of a public transportation bus. Hardware must be able to function within temperatures of -16.1°F below zero and 109.0°F above zero, Fahrenheit.	C	<p>All proposed equipment from Connexionz, including our Medius and MDTs designed for bus activity - are ruggedized to withstand and thrive in the most extreme conditions.</p> <p>Environment, Temperature: -40.0°F below zero and 185.0°F above zero, Fahrenheit.</p> <p>Humidity: 10-90% non condensing MIL-810G (wheeled vehicle vibration)</p> <p>Electrical, 12V or 24V nominal, 10.8V – 26.4V Power max operating: <20W.</p>
	7. Maintenance and upkeep of ITS components per contractual requirements.	C	<p>All Warranty and Maintenance activity will adhere to your contract and master service agreement.</p> <p>The same customer success team that deploys your contract will be responsible for your ongoing support and maintenance. The team you grew to know and trust through deployment will also ensure your success in the long-term. It's a formula that has proved to be successful. Refer to the resumes section in our response for resumes of key personnel for this Contract.</p> <p>Many of our customers have been with us for more than 15 years. In the technology space, that is truly remarkable. Our customers are family, so your success is our success.</p> <p>We are happy to certify that our equipment has a minimum five year service life and an expected</p>

			life of greater than ten years. All our proprietary hardware have a mean time between failures over ten years, and our system uptime is better than 99.99%.
2. Automatic Vehicle Location (AVL) System			
A. Mapping Functional Requirements			
	1. Several basic features must be available when using the mapping component, including:	CM	Our system provides easy to read maps with highly accurate GIS data.
	a. Pan, zoom in, and zoom out of the map, using both the mouse and shortcut keys	C	“Panning and zooming” on the maps provided in our system is standard. Your team will easily be able to locate items of interest with a minimum of effort.
	b. Undo pan and zoom actions.	C	“Panning and zooming” on the maps provided in our system is standard. Your team will easily be able to locate items of interest with a minimum of effort.
	c. Mini-map display that allows the dispatcher to see Yakima Transit’s service area and to quickly select an area to see on the main map.	CM	Instead of a mini map display: The dispatcher will be able to select any vehicle or route, which will automatically zoom into the service area requested – plus current vehicle location, and position on the map.
	d. Latitude/Longitude and address must be displayed at the location of the mouse pointer on the map.	CM	At the beginning of a project, we will carry out an audit of all platforms and stops in your system – including precise latitude/longitude coordinates. This is necessary because our system is so precise it is able to differentiate whether your vehicle is at the beginning or at the end of a stop. This also means that you can have full confidence in the location of all your stops and transit centers. For this reason, in our system design we have deemed it not necessary to display latitude and longitude information at the location of the mouse pointer on the map.
	e. Ability to hide or display Bus stops on the map. Bus stop information including stop name, routes served, and upcoming bus arrivals can be viewed when bus stop is shown.	CM	Our system gives you many tools that allow you to easily manage your stops.
2. Mapping tools must be provided that include:			
	a. Proximity Circle tool that will display all vehicles within a certain, user-selected radius of a given address point. This circle should generate a list of vehicles within its boundary. Search results can also include different map layer elements.	CM	Connexionz believes that in Transit – best practices for continuity and precision, plus adherence to National Standards, is the use of GTFS Realtime. GTFS – as associated with Google Maps is a feed specification that allows public transportation agencies to provide realtime updates about their

	<p>Tool can also be used to display a table of the closest vehicles to a given address point (as the crow flies).</p>		<p>fleet to application developers. It is an extension to GTFS (General Transit Feed Specification), an open data format for public transportation schedules and associated geographic information.</p> <p>Therefore – Connexionz will recommend that should Yakima need, for any reason, need tools like “proximity circle” - or layering of elements, or use of a “distance tool” - you should continue to use the ESRI – City Map product which Yakima currently incorporates at CityMap (yakimawa.gov)</p> <p>If there are routes which change at any time, they can be uploaded to the CityMap. But CityMap has so many other types of functionality – completely unrelated to Transit Operations. So our recommendation would be to continue to utilize City Map as part of the overall service</p> <p>And note that ALL relevant transit map functionality, including the customer facing elements will be completely available with the Connexionz Platform.</p> <p>To “temporarily” monitor specific vehicles or routes, our tools allows them to be filtered and monitored. There is no need for “secondary windows”.</p>
	b. Address search.	N	
	c. Point of interest search. Ability to locate a vehicle, facility, bus stop or point of interest within a specified proximity to a point on the map.	N	
	d. Distance tool that will display the distance between 2 or more specific points. This must provide the user the option of distance as the crow flies, or by street segments.	CM	<p>The public website provides a trip planner that allows your team to move a pointer to the start and another pointer to the end of a journey.</p> <p>Our system then calculates a journey based on the departure time of the journey or a journey that involves the least walking. Estimated travel times are displayed for each leg of the journey.</p>
	e. It must be possible to open a secondary AVL window that contains the same map functionality as the primary AVL window. The secondary window must be able to be opened or closed as required, typically to temporarily monitor specific vehicles or routes.	CM	<p>Our system is accessed through a web browser and multiple instances of our dispatch application can be launched through multiple tabs. Individual cabs can easily be tracked to a secondary screen where specific vehicles or routes can be monitored.</p>
	3. Map attributes and layers must include:	CM	

	a. Map Views: multiple views must be supported, consisting of the various layers that a user wants to display on the AVL map.	CM	To continue clarification – our system has proven vehicle and location views, plus graphic evidence of route activity, relative to requirements. Our customers have not expressed a need to look to other maps to manage their daily operations.
	i. Map views must be able to be toggled in real-time.	CM	Since our customers haven't required multiple maps there is no need to toggle between them.
	ii. Street names should be displayed at a defined zoom level.	CM	On our maps, street names will appear as your team zooms in.
	ii. Display of information associated to GIS elements in ESRI format shape file(s).	CM	GIS elements will not be required with the Connexionz Transit Specific Platforms
	b. Route Visualization:	C	All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response. Also – any time points, pattern points or other required points will be available to you.
	i. Routes should be able to be hidden or shown individually.	C	Our system easily allows your team to filter routes so that they can focus on what needs to be done.
	ii. Locate route: the map should pan and zoom to display the whole route.	C	Your users will be able to pan and zoom to be able to see an entire route.
	iii. A route's display must consist of a set of lines and stops. The choice of line for individual routes should be configurable. iv.	C	Your team will be able to select various options to ensure that your routes are easily distinguishable from one another.
	iv. It must be possible to show time points, pattern points, RSA corridors and non-display patterns for visible routes.	C	Our system allows your users to easily view time points, pattern points, RSA corridors and non-display patterns for visible routes. In addition it gives them easy to use functionality to move some of these elements for route changes and optimisations.
	c. Facility Visualization: User must be able to display or hide any facilities	CM	Through Google Maps framework – facilities and streets will be shown, and platforms will be highlighted. Specific capability to “hide” or “show” buildings are not a necessary feature to manage a fixed route transit operation. Our customers have said that within the context of managing transit operations, locating a facility is only relevant if the “facility” is a stop or transit center or platform.

	i.	Facilities should be able to be hidden or shown individually.	CM	Since only transit related facilities are shown, the map is not cluttered, and there is no need to hide or show “facilities.”
	ii.	Locate facility: the map should pan to display the facility and indicate the facility’s location.	CM	Keeping in mind, the above comments. Your users will be able to pan and display facilities of interest.
	iii.	A facility’s display must consist of an icon, and an icon’s shape, color, and size must be configurable.	CM	Your users will have many options to customise elements of the map to suit their tastes.
	d.	Geofence Visualization: Users must be able to create geofences	C	Geofencing is available as part of the Connexionz solution, - applicable in many ways, as will be shown as part of response, and/or during demonstration.
	i.	Geofences should be able to be hidden or shown.	C	You will be able to hide or show their offences.
	ii.	Locate geofence: there must be a means for the user to pan the display to a specific geofence and indicate the geofence’s location.	C	Your users will be able to pan and zoom to be able to see a specific geo-fence.
	e.	Vehicle Attribute Visualization: From the map view the user must be able to select a vehicle icon and configurable text should display the vehicle’s current information (including vehicle type, schedule adherence status, and route adherence status)	C	Your team will be able to see this information at a glance when they select or hover the mouse over a particular vehicle.
	i.	Vehicle ToolTip: hovering over a vehicle with the mouse must display configurable information about that vehicle	C	Your team will be able to see this information at a glance when they select or hover the mouse over a particular vehicle.

3. Vehicle Tracking Functional Requirements

A. Tracking Functional Requirements

	1.	Software must provide a vehicle table that displays relevant information about the Yakima Transit vehicles, including:		<u>All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</u>
	a.	Location, Route and Schedule Adherence, Current Work and GPS Troubleshooting.	CM	In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response
	b.	Quick View Pane: Displays the most relevant information of the selected vehicle		And all icons are configurable.
	c.	Vehicle Detail: User will be able to view vehicle details including:		Location/Route and Schedule Adherence – YES
				Quick View Pane – YES
				Vehicle Detail – YES
				Vehicle Information – Make Model, etc – NO

	<ul style="list-style-type: none"> i. Vehicle Information: Make, Model, Year, VIN, License plate i. Schedule and route adherence status ii. Assignment Status (logged on/off, pulled in/ On out, Assignment) iii. Event Type associated to that vehicle iv. Communication status (in/out of coverage) v. User entered notes vi. List of installed devices vii. Reporting Rates Configuration viii. Location information ix. Current Work x. Current Passenger Capacity xi. GPS status xii. Fuel Configuration (fuel type & consumption rates) 		<p>Schedule/Route Adherence – YES</p> <p>Assignment Status – YES</p> <p>Communication Status – YES</p> <p>Notes –YES</p> <p>Installed Devices - YES</p> <p>Reporting Rates- YES</p> <p>Location Information – YES</p> <p>Current Work – YES</p> <p>Current Passenger Capacity – YES</p> <p>GPS Status – YES</p> <p>Fuel Type – Configurable</p> <p>Consumption Rates - NO</p>
	<p>2. Locate vehicle function: the map view must be able to automatically pan and display the vehicle and indicate the vehicle’s location.</p>	<p>C</p>	<p>This function is available as a standard part of the our system – and can be immediately executed as per dispatch procedures</p>
	<p>3. Follow vehicle function: must provide a map view that automatically pan to a specified vehicle and continue to pan the map to keep the vehicle displayed on the screen.</p>	<p>C</p>	<p>This function is available as a standard part of the Cloud Dispatch platform – and can be immediately executed as per dispatch procedures</p>
	<p>4. Poll vehicle: poll a selected vehicle to obtain its current GPS location in real-time.</p>	<p>C</p>	<p>This function is available as a standard part of the Cloud Dispatch platform – and can be immediately executed as per dispatch procedures</p>
	<p>5. Vehicle reporting rate control: be able to change the GPS reporting rate of a vehicle or group of vehicles.</p>	<p>C</p>	<p>This function is available and configurable – reporting “pings” can be as close as one or two seconds or as far away as you would wish...</p>
	<p>6. To minimize wireless costs schedule adherence should be calculated on the vehicle and only reported to Dispatch when there is an exception to a configurable adherence window.</p>	<p>C</p>	<p>All schedule adherence activity is configurable – Connexionz would recommend Dispatch reporting to be immediate – since activity and reporting trends are best addressed when completely accurate and updated.</p> <p>This can be done – but accuracy can be achieved without additional wireless costs – because the metadata required for the accuracy involves minimal wireless data use.</p>
	<p>7. Text Messaging: Send a text message to selected vehicles.</p>	<p>C</p>	<p>Text Messages can be sent to individual, or blocks of vehicles as configured.</p>
	<p>8. Vehicle Filters: Users must have the following tools when viewing vehicle details:</p> <ul style="list-style-type: none"> a. Global filters should be able to be created by Yakima Transit, as 	<p>C</p>	<p>This function is available as a standard part of the Cloud Dispatch platform – and can be immediately executed as per dispatch procedures. Plus - <u>All of these basic features required are fully available as part of the</u></p>

	<p>well as individual ones by the dispatcher.</p> <p>b. Vehicles should be able to be filtered by their GPS properties (GPS status, antenna functionality, GPS reporting).</p> <p>c. Vehicle filters should be able to be created based on the following criteria:</p> <ul style="list-style-type: none"> i. The vehicle geographic location iii. The vehicle type iv. Vehicle GPS properties (GPS status, antenna functionality) iv. The vehicle garage (Facility) v. The vehicle current route vi. Individual vehicles 		<p><u>Connexionz AVL Solution</u> in both Route Planner/Dispatch and all Web Tools</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p> <p>All of the required filters – geo locations, vehicle type, GPS status, location, route and individual vehicles can be configured to your requirements and are easily accessible. Training is easy and our customers use all of these functions often.</p>
	<p>9. It must be possible to temporarily increase a vehicle’s location reporting rate.</p>	<p>C</p>	<p>All reporting rates are configurable, and can be increased or decreased as needed.</p>

4. Mobile Data Terminal

A. Hardware Functional Requirements

	<ul style="list-style-type: none"> 1. The MDT and all other on-board equipment must be of commercial (not consumer) grade and ruggedized. to operate within a transit environment. 2. The MDT In-Vehicle Hardware shall include the following: <ul style="list-style-type: none"> a. A color display and touch screen for driver input. b. Computer processing and operating system for the MDT software. c. Hard-wired connections to the vehicle interfaces and between the in-vehicle peripheral equipment (e.g. AVA system, APCs, integrations to headsigns and fare boxes as specified). Wireless links in the Vehicle Area Network (VAN) or between the MDT and the VAN are not acceptable. d. Antenna systems internal to the MDT for GPS, Wi-Fi and cellular data are preferred to minimize the need for extra cabling and antenna installations on the bus and negate tampering. 	<p>C</p>	<p>Our MDT is mounted so that an operator can interact with the device through its touchscreen interface. Our Android MDT application allows your operator to monitor their on-time performance, see how they are progressing through a route and have access to a map.</p> <p>Color Display – YES</p> <p>Computer processing – YES</p> <p>Hard Wired Connections to Interfaces – YES with Medius when applicable</p> <p>Antenna Systems – YES with Medius</p> <p>Headway information and detour details can be communicated via the MDT by way of Dispatcher messages to the Operator. To avoid driver distraction, our MDT can be configured to prevent the Operator from using the MDT while the vehicle is in motion.</p> <p>Our Vecoton K86 MDT unit has an anti-glare and anti-smudge touchscreen and is MIL-STD-810G certified. MIL-STD-810G is a US military</p>
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		<p>specification that guarantees a level of durability for a piece of technology. Specifically, it means the equipment has gone through a series of 29 tests.</p> <p>These put the phone up against shock, vibration, heat, cold, gunfire shock, humidity, and more. Any MIL-STD-810G device should be field-ready or even "combat-ready" in principle. A lot of technology sold to the US military must be MIL-STD-810G compliant.</p>
	<p>3. MDT Specifications (minimum):</p> <ul style="list-style-type: none"> a. Memory <ul style="list-style-type: none"> ii. Internal SD card for flash memory, upgradeable to 32 GB iii. External SD card socket b. GPS / AVL <ul style="list-style-type: none"> i. Integrated 50-channel GPS receiver with internal antenna (connector for optional external antenna) c. Wireless Modems Cellular Access <ul style="list-style-type: none"> a. Integrated modem for public data network (e.g., EVDO, HSPA, LTE) b. Certified by proposed carrier c. Integrated 802.11/b/g/n Wi-Fi data modem with internal antenna (connector for optional external antenna) d. Optional Bluetooth capabilities d. User Interface <ul style="list-style-type: none"> i. Color display with touchscreen ii. Multi-button keypad w/LED backlight (able to configure function of keys) iii. Ambient light sensor for automatic backlight adjustment (also with driver adjustable backlight control) e. Adjustable mount hardware for the MDT. The mount hardware will allow drivers to reposition the angle and tilt of the display. f. Cabling for connections to the applicable on-board equipment, antennas, power, and ignition switch. 	<p>Our mobile data terminal (MDT) has been certified to IP67 standard. IP67 is a standard that indicates how well a device is protected against water and dust. It is defined by the International Electrotechnical Commission (IEC) under the international standard IEC 605291.</p> <p>IP67 ensures that the device is "dust resistant" and can be "immersed in 1 meter of freshwater for up to 30 minutes".</p> <p>CPU - Dual Core ARM</p> <p>Memory - 1Gb onboard</p> <p>64Gb + expansion</p> <p>Interfaces</p> <p>Power</p> <p>HDMI (expandable)</p> <p>USB</p> <p>Digital I/O (expandable)</p> <p>CAN</p> <p>J1939</p> <p>Audio In/Out</p> <p>Ambient noise detection</p> <p>GPS</p> <p>Ethernet</p> <p>Bluetooth</p> <p>WiFi (passenger and maintenance)</p> <p>CNX Medius G2's capabilities include:</p> <p>Built-in WiFi and Bluetooth to support service and maintenance via wireless software update</p> <p>Multiple connection types:</p> <p>SAE J1939</p> <p>J1708</p> <p>CAN</p>

			<p>SIRI</p> <p>Ethernet</p> <p>HDMI</p> <p>USB</p> <p>Cellular connectivity</p> <p>Can be installed in overhead compartments, behind the driver’s seat affixed to a bulkhead, or within an equipment cabinet.</p>
B. Software Functional Requirements			
	<ol style="list-style-type: none"> 1. The MDT Software should provide the vehicle operator with the following information/functionality: <ol style="list-style-type: none"> a. Driver Log On screen that appears immediately after the Mobile Data Terminal powers up. The driver will be prompted to enter his Driver ID and PIN number. b. Driver Log On should automatically act as log on to other connected ITS systems on the vehicle, such as: <ol style="list-style-type: none"> i. Head sign ii. Voice Annunciator (AVA) iii. Automatic Passenger Counter (APC) iv. Farebox c. View of work assignment with stop arrival/departure times. This information will be updated as stops and time points are passed. d. Route Adherence Status. e. Schedule Adherence Status <ol style="list-style-type: none"> i. Adherence status should be calculated and displayed on the MDT for timely action by the operator. ii. Acceptable schedule adherence should be based on a time window that can be configured by the CAD/AVL system administrator. iii. Only schedule adherence exceptions should be transmitted and displayed for the Dispatcher to minimize wireless data usage. 	<p>CM</p>	<p>ALL Software Function Requirements are available as a standard part of the Cloud Dispatch platform – and can be immediately executed as per dispatch procedures. Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution</u> in both Route Planner/Dispatch and all Web Tools</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response.</p> <p>Login – YES</p> <p>Connection to Head Sign – YES</p> <p>AVA – YES</p> <p>APC – YES</p> <p>Work Assignment View – YES</p> <p>Route Adherence Status – YES</p> <p>Schedule Adherence – YES</p> <p>Calculated - Gives Current Time and Next Timepoint</p> <p>Acceptable Schedule Adherence - YES</p>

	<ul style="list-style-type: none"> f. Manual Passenger Counting Capability i. A MDT screen should be available to Drivers to assist with counting of passengers boarding and alighting. ii. Passenger counting screen shall be configured to automatically be displayed to the Driver when the door(s) open. iii. Minimal button presses shall be required by Driver to record the number of passengers that have boarded or alighted before departing the stop. Vehicle load data shall be calculated and made available to the Driver on the MDT. iv. Count and vehicle load information shall be sent back to the office CAD/AVL software automatically over the wireless network after departing each stop. v. MDT should allow for bus operator to manually enter different fare types in the absence of an automated farebox. g. Two-Way Messaging <ul style="list-style-type: none"> i. A selection of canned messages (as defined by Yakima Transit) will be available to the Driver on the terminal. The Driver can send a message to Dispatch with a minimum of distraction, and only when the vehicle is not in motion. ii. The Driver will be able to receive the following message types from the Dispatch software: <ul style="list-style-type: none"> a. Normal Messages – These text messages appear in the Text Message summary screen and can be viewed by the driver at their convenience. b. Priority Messages: If the vehicle is in motion when a 	<p>Manual Passenger Counter – YES</p> <p>Counter Displayed when Door is open – MAYBE</p> <p>Our system tracks door status but this depends on the model of vehicle as some manufacturers do not provide this information.</p> <p>Record Passenger Button – YES</p> <p>Drivers can manually count passengers boarding and alighting.</p> <p>Our system sends APC data to your dispatcher to see passenger loadings not to the Driver.</p> <p>Manual fare counts are on the MDT. They are enabled via a tap of the touchscreen.</p> <p>Two way messaging -- YES</p> <p>Counts are automatically sent back to the system where they are displayed for your Dispatchers to see.</p> <p>Our MDT also allows you to load fare types and then manually count fares by type without needing an automated fare box.</p> <p>Your Driver can use the MDT to receive and send messages to Dispatchers.</p> <p>Our system allows you to store a set of canned messages that you define on the MDT.</p> <p>Your MDTs can be configured so that Drivers can safely send and read messages only when the vehicle is not in motion.</p>
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	<p>message is received the Driver will be alerted with a sound. When stopped, these messages will pop up on the driver display and require the driver to press a key to verify that the message has been received and read. The message will not be removed from the screen until the driver acknowledges the message.</p> <p>c. Response Required Message: The operator must respond to the message with either a Numerical value (keypad to be provided on touchscreen) or by using YES/NO touchscreen keys.</p> <p>iii. RTT/PRTT - a driver may send a Request to Talk (RTT) or Priority Request to Talk (PRTT) message to a Dispatcher via preconfigured RTT and PRTT button on the MDT.</p> <p>iv. Once a RTT/PRTT message is delivered to the central system, it will be shown on the dispatcher’s event screen, together with the time received. The dispatcher can then take the appropriate action with their existing radio system to set up a voice call with the driver.</p> <p>h. Provide interface with additional onboard devices (APC, annunciator, LED signs) for triggering actions at designated locations.</p>	<p>On our system, Drivers are given a visual cue that tells them how many unread messages they have received.</p> <p>Priority messages: For safety reasons, our customers have asked us to minimize the amount of distraction via the MDT. When an urgent need arises they have preferred to use their mobile radio or VOIP systems to make contact.</p> <p>Response Required Message – For safety reasons, our customers have asked us to minimize the amount of distraction via the MDT. When an urgent need arises they have preferred to use their mobile radio or VOIP systems to make contact.</p> <p>RTT/PRTT - YES</p> <p>Dispatcher Event Screen – YES</p> <p>Interfaces for triggering actions at designated locations – NO</p> <p>Our system is highly automated and there is no need for the driver to intervene. If APCs are installed the data is stored and routed to our system automatically. All signage and AVA systems are configured centrally and triggered automatically.</p> <p>There is an option to allow the driver’s microphone to override our system and the</p>
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			system’s FM radio speakers if an ad hoc announcement needs to be made.
C. General MDT Operations/Information			
	<ol style="list-style-type: none"> 1. The following information and functionality shall be available on the MDT: <ol style="list-style-type: none"> a. GPS status of the vehicle will be displayed, to show GPS lock or no-lock status. b. The software version of the application will be shown c. A control should be provided to the Driver to adjust the display backlight intensity. d. A control should be provided to the Driver to adjust the speaker volume. e. The software will have a function key that can toggle the screen graphics back and forth from a daytime version to a nighttime version. The daytime graphics will be designed for good readability under well-lit conditions, while the nighttime graphics will be designed for dark conditions. 	C	<p>GPS Lock – NO. If its not tracking then your Dispatchers will see this status on their screens.</p> <p>Software Version Shown – YES</p> <p>Backlight Intensity control – YES</p> <p>Speaker Volume control - YES</p> <p>Day or Night Mode Toggle – YES</p> <p>Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</u></p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
D. Communication Functionality			
	<ol style="list-style-type: none"> 1. The MDT Software will be capable of the following communication features: <ol style="list-style-type: none"> a. When sending messages over the wireless network, the MDT must be capable of queuing messages in a buffer and repeatedly attempting to deliver them to the host application. Each message type must be configurable to attempt delivery indefinitely or to attempt delivery only for a fixed period of time after which the message will be discarded. This sending method is known as STORE and FORWARD. b. When sending messages over the wireless network, the MDT must be capable of sending messages that are sent only once, regardless of whether they are acknowledged. This sending method is known as SEND and FORGET. 		<p>STORE AND FORWARD - YES</p> <p>SEND AND FORGET - YES</p> <p>This function is available as a standard part of the Cloud Dispatch platform – and it can be configured per your requirements.</p>

			<p>Our system relies on a proprietary onboard vehicle logic unit (VLU) called the Medius to record and store data.</p> <p>All data is stored and is available for reporting purposes.</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response and will be easy to demonstrate at your convenience.</p>
E. MDT Management Software			
	<ol style="list-style-type: none"> 1. The system must allow Yakima Transit to remotely download new software and files to the mobile data terminal, including at a minimum: <ol style="list-style-type: none"> a. Ability to remotely deploy both application updates as well as complete operating system updates over-the-air, including: <ol style="list-style-type: none"> i. Mobile applications and operating system updates ii. Bus schedules iii. Annunciator message files b. Support for scheduling of over-the-air pushing and installation of software updates. c. Compression and packet-level resume of transfers to minimize over-the-air data. 	C	<p>All communication with the MDTs are in the Cloud, and changes to the software are pushed to the terminals at your direction.</p> <p>In addition, any immediate changes to specific routes will be available in Route Planner the next day.</p> <p>Finally – all pre planned scheduling will automatically post per the route planning functionality and the methodology is part of the route planning training procedures.</p> <p>You can configure your MDTs to select one of three safety modes.</p> <ol style="list-style-type: none"> 1. Low: All functionality is available 2. Medium: Only the time is displayed 3. High: The screen is deactivated (black). <p>The display becomes available only when the bus stops and the door opens at medium and high safety levels.</p> <p>When we designed our system, our customers requested a conservative approach to maximize safety. For this reason, in medium and high safety modes, your drivers cannot gain full access to the MDT’s functionality unless the vehicle is stationary and the door is opened.</p>
F. Remote Diagnostics of the MDT			
	<ol style="list-style-type: none"> 1. Over-The-Air Functionality Include: <ol style="list-style-type: none"> a. Graphical dashboard allowing users to monitor fleet health at a glance. b. Ability to remotely obtain screen captures of any in-vehicle MDT. c. Ability to remotely access the registry and file system of MDTs. d. Ability to start/end individual processes on any mobile terminal wirelessly. 	C	<p>Graphical dashboard – YES</p> <p>Remote screen captures – YES</p> <p>Remote access registry and file system – YES</p> <p>Remotely start and end individual processes – YES</p>

	<ul style="list-style-type: none"> e. Ability for units to automatically report critical event information and logs to the server for analysis. f. Ability to notify system administrators via email when critical events occur on MDTs, and the ability for system administrators to view events. 		<p>Automatic reporting – NO</p> <p>Automatic notifications -- NO</p>
G. Accurate Record Keeping			
	<ul style="list-style-type: none"> a. The system must automatically catalogue all programs and updates sent to the terminals, replacing errorprone manual record keeping. The system should quickly determine which units are due for an upgrade. b. Comprehensive reporting suite with reports ranging from monthly MDT data usage to complete MDT software version information. 	N	<p>Our system does not automatically catalogue all MDT programs and updates.</p>
H. Retrieve Files Remotely			
	<ul style="list-style-type: none"> 1. The system must provide data logging capabilities that can remotely retrieve data log files such as GPS or speed logs for immediate use in emergency situations. 	C	<p>Our system sends all GPS data in real-time to our central system.</p> <p>Computer Aided Dispatch (CAD) and Automatic Vehicle Location (AVL) components of our system are tightly and seamlessly integrated. Our default polling rate is once every ten seconds, this can be increased.</p>
d. 5. MDT/AVL Reporting			
A. Functional Requirements			
	<ul style="list-style-type: none"> 1. The MDT In-Vehicle Hardware must have the capability to report AVL/GPS information to the dispatcher center in each of the following ways: <ul style="list-style-type: none"> a. Event Based Reporting – When a function is performed (e.g. door opening, bus off route, speeding, etc.) the location of the vehicle is reported along with any data relevant to the performance of that particular function. b. Distance Traveled Reporting – every time the vehicle has moved a predetermined distance the Mobile Computing Device automatically reports the vehicle’s location to the host AVL system. The advantage of this method is that it eliminates unnecessary reports from vehicles 	C	<p>In our system the GPS functionality is within the Medius VLU which is used to drive all your on-vehicle functionality.</p> <p>The MDT is only primarily used as a driver trip management and communications tool.</p> <p>If a vehicle is off-route a number of alerts become visible to your dispatchers.</p> <p>In our system, the GPS reporting rate automatically falls to a lower rate when the vehicle is stationary.</p>

<p>that have not moved from their previously reported positions.</p> <p>c. Time Elapsed Reporting – every X minutes (X being a predetermined value) the MDT automatically reports the vehicle’s location to the host AVL system. The reporting rate should be configurable for single vehicles or groups of vehicles from the Host-end Application software.</p> <p>d. Hybrid GPS Reporting – system that incorporates the advantages of all three of the preceding methods. The key idea of AVL is to receive information ONLY WHEN desired and not waste airtime sending GPS information that is not useful to the dispatch operations.</p> <p>e. Poll-on-Demand – MDT capable of reporting GPS based on an AVL poll request message from the Host-end Application Software.</p> <p>f. Maximum Report Rate – MDT unit can be set to report GPS not more than every X minutes. E.g., the MDT unit can be set to not report GPS more than once a minute to conserve air time and bandwidth.</p> <p>g. Emergency – Reporting rates can automatically be adjusted in the case of an emergency.</p>	<p>In our system the default moving and stationary polling rates are configured for the entire fleet at the outset.</p> <p>The cellular data plans we use have no data caps. Thus there is no need to economize on data.</p> <p>That said, the amount of data we move for each GPS report is very small.</p> <p>Given the comments made above, this functionality is unnecessary.</p> <p>Modern cellular communications allow for high transfer speeds and bandwidth. Our modest data transmission volumes mean that we don’t need to conserve air-time and bandwidth.</p> <p>Even if the vehicle is stationary, when the Driver’s duress alarm is activated our system automatically adjusts the reporting rate to the moving vehicle reporting rate.</p>
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1. Automated Voice Annunciation System (AVA)

A. Functional Requirements

<ol style="list-style-type: none"> 1. Meet the requirements of the Americans with Disabilities Act (ADA). 2. Automatically announce and display recorded information about each stop, major intersection, key locations, transfer opportunities, and route destination in each Yakima Transit fixed route vehicle prior to arriving at that location; and 3. Provide the ability for authorized personnel to record the announcements and construct the related text at a centrally-located location, 	<p style="text-align: center;">C</p> <p>All ADA required functions are available as a standard part of the Cloud Dispatch and Route Planner platforms as it coordinates with the MDT – and can be immediately executed as per dispatch procedures.</p> <p>ADA – YES</p> <p>AVA as required PRIOR To arrival – YES</p> <p>Central Location ability – YES</p>
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	<p>transferred to buses and to have those announcements associated with the appropriate trip.</p> <ol style="list-style-type: none"> 4. An AVA shall be installed on each Agency fixed-route vehicle. 5. Announcements shall be created utilizing text-to-speech technology. <ol style="list-style-type: none"> a. Programming a new announcement should be as simple as typing it in a text file in a desktop application. b. A desktop preview program must be provided that permits testing of the announcements prior to use onboard a bus and permits tricky pronunciations to be spelled phonetically. c. It must be easy to quickly and easily create custom dictionaries. d. English and Spanish language must be supported. e. If possible, Yakima Transit should be able to utilize pre-recorded .wav file announcements. 6. The AVA shall function as follows: <ol style="list-style-type: none"> a. As each Yakima Transit fixed route vehicle approaches a stop, major intersection, or other designated location, a digitally-recorded announcement shall be automatically made over the onboard public address (PA) system speakers (it is the responsibility of the proposers to test the vehicle PA system speakers for proper operation and provide speakers or replace speakers as needed) and displayed on an LED sign inside the vehicle to inform passengers about the next stop. b. The volume of the announcements shall be automatically adjusted according to the noise level on the vehicle at the time. c. No vehicle operator interaction shall be required to operate the annunciation system. However, 		<p>AVA on each vehicle – YES</p> <p>TEXT to Speech – YES</p> <p>Simple programming – YES</p> <p>Preview - YES</p> <p>Custom Dictionaries – YES</p> <p>English and Spanish – YES</p> <p>wav - YES</p> <p>AVA function as required – YES</p> <p>Automatic Volume Adjustments – NO</p> <p>No Operator Interaction Required – YES</p> <p>Manual Override Capability - YES</p> <p>Our system monitors the driver’s microphone push-to-talk button. If the driver uses the microphone, all AVA announcements and media soundtracks will be overridden while the driver makes a manual voice announcement.</p>
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	<p>the vehicle operator shall have the ability to manually operate the system whenever it is deemed appropriate to do so. Further, the vehicle operator’s use of the on-board PA system shall override any automated announcements.</p>		<p>Our system only supports text-to-speech (TTS) audio files. TTS technology gives you better consistency as the human voice can sound different on different days and occasions, even with the same voice actor. Furthermore, the same voice actor may not always be available when you want them.</p> <p>Supporting both English and Spanish language messages, TTS technology uses Speech Synthesis Markup Language (SSML), allowing for emphasis, substitutions, phonemes, and other tricks. Today, TTS technology does a fantastic job of cost-effectively mimicking a human voice.</p>
	<p>7. In the event that a vehicle is operating off-route, the automated announcements/displays shall not be made. The system shall detect reacquisition of the route, at any point along the route, and automatically determine and announce the next valid bus stop or other designated location. Off-route and on-route detection and recovery shall be automatic and not require operator intervention or action, nor shall it require the vehicle to be driven to special reacquisition points.</p>	<p>C</p>	<p><u>When the vehicle is operating off route the all AVA announcements will not be triggered as they are activated based on GPS locations.</u></p> <p><u>Being off route means they will never be triggered.</u></p> <p><u>When your vehicle returns to its route, all functionality will resume including calculating ETAs at wayside signage, those displayed on your public websites, SMS messages, mobile devices.</u></p> <p><u>Our system doesn’t require you to specify reacquisition points.</u></p>
	<p>8. The location information announced/displayed shall be the name of the stop, the location of the stop (if different from the stop name), transfer opportunities (if the potential route is currently operating), and other information to be determined at a later date (e.g., points of interest located close to the stop). The annunciation system shall use the vehicle location information from the AVL to trigger these announcements on-board the vehicle whenever the vehicle enters a “trigger zone.” A trigger zone is a user-defined area that is located just prior to each stop location configurable by the vehicle on both a global basis or as superseded on a stop-specific basis. For example, the trigger zone may</p>	<p>C</p>	<p>Location Information – As required by Yakima – YES</p> <p>Trigger Zone – Configurable exactly as Yakima requires - YES</p> <p>This is a standard <u>feature</u> and fully available as <u>part of the Connexionz AVL Solution</u> in Route Planner. Trigger Zones are completely configurable to optimize accuracy.</p>

	begin 800 feet before each stop or other announcement location.		
	9. Optionally, at each stop, as the doors are opened for passenger boarding, a route/destination announcement shall be made outside the vehicle. The volume of the external announcement must be able to be set globally dependent on the time of day and location that the announcement is being made.	C	<p>Our AVA system performs 'dual zone' announcements.</p> <p>This means the destination/route on the outside and next-stop on the inside of the bus.</p> <p>The system also has its own amplifier, and it can integrate a driver microphone.</p> <p>Stop requests can also be integrated into the AVA if required</p> <p>In our system the volume is manually set once at deployment but is not automatically adjusted by time of day or by location.</p>
	10. In addition to next stop announcements/displays, the annunciation system shall be capable of making time-based, location-based and vehicle operator-initiated announcements/displays. Time-based announcements/displays shall be programmed to be made on-board the vehicle at specific times of the day, days of the week, or within specified time periods. Separate announcements/displays shall be programmed to be made on-board the vehicle when that vehicle is at a specific location(s).	C	<p>You can configure messages to be displayed on optional next stop displays and optional infotainment LCD displays.</p> <p>These messages can be triggered to play based on time or by location.</p>
	11. Vehicle operator-initiated announcements/displays (e.g., safety-related announcements) shall be programmed to be made at the vehicle operator's discretion. The system shall be able to store up to a total of 99 time-based, location-based and vehicle operator-initiated announcements/displays on the MDT.	C	<p>Our customers have requested that Drivers don't have to make public announcements for governance reasons.</p> <p>They prefer that a senior manager reviews and approves all announcements beforehand.</p> <p>There is no limit to the number of pre-defined announcements that can be stored in our Publisher tool.</p>

2. In-Vehicle Hardware Requirements

	<p>A. The AVA shall utilize the AVL MDT to the extent possible to provide the following capabilities:</p> <p>1. Automatically initiate audio announcements and sign displays;</p>	C	<p><u>This is a basic feature required are fully available as part of the Connexionz AVL Solution</u> in both Route Planner/Dispatch and all Web Tools</p> <p>Auto Initiate – YES</p>
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	<ol style="list-style-type: none"> 2. Communicate with the AVL system and other on-board systems, as necessary; and 3. Provide the vehicle operator with manual control of the system, if necessary; 4. Dual-channel high fidelity audio capable of playing simultaneous internal (and optional external) announcements; 5. Two built-in 20-watt amplifiers; or whatever size to sufficiently be audible. 6. Noise-sensing device for each audio channel, which shall automatically and independently adjust each channel's volume as appropriate in response to ambient noise detected; and 7. Independent volume control for each audio channel, automatically adjusted for ambient noise. 		<p>Communicate with AVL – YES</p> <p>Manual Override – YES</p> <p>Two Channel AVA – YES (depending on Bus PA capability) - e.g. a two channel PA system is best).</p> <p>20-Watt AMP – YES</p> <p>Ambient Noise – YES with Sensor</p>
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3. In-Vehicle LED Signage

A. Functional Requirements

	<ol style="list-style-type: none"> 1. The internal LED display sign for each fixed route vehicle shall display coordinated text from the AVA system to display the following: <ol style="list-style-type: none"> a. Current date and time of day b. Stop Requested announcements c. Next stop announcements d. Landmark or attraction announcements e. Yakima Transit generated PSA announcements 2. The LED sign shall meet all ADA requirements for internal signage 	<p>C</p>	<p>Time Stamp –YES</p> <p>Stop Requested – YES</p> <p>Next Stop Announcements – YES</p> <p>Landmark Announcements – Configurable – YES</p> <p>PSA Announcements - YES</p> <p>Based on your on board LED Displays, Connexionz works with the controllers to provide all of the “functional requirements” set.</p>
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4. Automated Passenger Counter (APC) Systems

A. Functional Requirements

	<ol style="list-style-type: none"> 1. Contractor must provide Automatic Passenger Counter (APC) equipment to collect passenger boarding and alighting counts on the vehicles and report counts back to Yakima Transit’s CAD/AVL software. 2. Each doorway on an equipped vehicle shall be fitted with one or more APC sensors. 	<p>C</p>	<p>There are two different answers for this question – Connexionz provides Passenger Counters, which will adhere completely to all of the functional requirements.</p> <p>This will work through configuration of the Connexionz platform to the EXISTING Halo Passenger Counters on the Yakima buses.</p> <p>In the event that Yakima chooses for Connexionz to provide “NEW” Passenger Counters – we will</p>
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<ol style="list-style-type: none"> 3. The APC sensors for each doorway will be mounted above the doorway passage, involving the use of infrared beam technology and no need for direct contact with passengers. 4. Floor treadles shall not be incorporated into the doorway sensor design. 5. The APC sensor for each doorway shall be connected to a single APC controller. <ol style="list-style-type: none"> a. The APC controller shall be connected to the standard SAE J-1708/J-1587 or J-1939 VAN Vehicle Area Network (VAN) to enable communication with the MDT. b. The APC sensors may alternatively be each connected directly to the J-1708/J-1587 or J-1939 Vehicle Area Network (VAN) to enable communication with the MDT without any intermediate APC controller. 6. Counts the number of passengers boarding and alighting at each stop, separately for each doorway. 7. Stores the boarding and alighting counts on-board, for each stop and doorway, including the GPS latitude and longitude for the stop location as well as the current date, time, block, route and trip. 8. Maintains the current vehicle occupancy, based on the cumulative boardings and alightings. 9. Assigns count records to stops based on GPS locations. 10. Transfers the stored counts date to the central transit management system via the cellular or wireless network. 11. Receives and implements APC subsystem software and data updates, from the central transit management system, via 	<p>install and configure to ALL of your functional requirements</p> <p>Our system sends the raw APC sensor data directly to our central system via our Medius VLU. Once in our central system, we process the data, and then the data is further checked, which allows your NTD submissions to be submitted.</p> <p>There is no need to supply APC data to the MDT. Your dispatchers will be able to see real-time loading information on their maps.</p> <p>As a cross-check, your drivers may carry out manual passenger counts on their MDTs.</p> <p>Calibration and alignment are a standard part of our installation procedure. Our system delivers a wide range of information, saving you considerable time in preparing your S10 and MR20 NTD form submissions.</p> <p>All our IRIS sensors are J1708 compatible.</p> <p>Our IRIS sensors are able distinguish passengers that are boarding or alighting. We mount the sensors directly above each door.</p> <p>Our system will record your required data for NTD reporting and also for designing new routes and schedules or optimizing existing ones.</p> <p>Our system will take the APC data and automatically calculate occupancy.</p> <p>Our system will location-stamp your count records.</p> <p>All data is transmitted to our central system via the cellular communications network.</p> <p>Raw APC data is routed through our Medius VLU. Its APC functionality is built in and the Medius can be updated remotely.</p>
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	<p>the cellular or wireless network.</p> <ol style="list-style-type: none"> 12. Provides a combination of pre-defined reports and the ability to create ad-hoc reports based on the APC data. 13. Supports data post-processing to improve the accuracy of the APC data. 14. Provides interface between APC post-processed data and standard GIS systems for service planning analysis. 	<p>Our Insights tool provides APC reports as part of its suite of pre-defined reports.</p> <p>Our system has a good reputation for accuracy because of the post-processing we do.</p> <p>Our customers regularly use APC post-processed data and other ITS data to help plan new services and optimize existing ones.</p>
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B. APC Performance Requirements

	<ol style="list-style-type: none"> 1. The doorway sensors shall be able to count and differentiate between boarding and alighting passengers. 2. The doorway sensors shall be able to separately count successive passengers that are walking as close together as is practicable, either one behind the other or side by side. 3. The doorway sensors shall be able to count the moving passengers with heights between 1 meter in height and a maximum height of the doorway. 4. The doorway sensors shall be able to count moving passengers with speed between 0.1 and 3 meters per second. 5. The doorway sensors shall be able to separately count a small child being carried by another passenger. 6. The doorway sensors shall not register as multiple passengers the passage of a single passenger that reaches into or out of the doorway passage, or is swinging their arms, while passing through the sensor beams. 7. The doorway sensors shall not separately count objects carried by passengers such as shopping bags or umbrellas. 8. Boarding and alighting counts shall only be recorded when the doorway is open. This will avoid any counting of passengers moving in the 	<p style="text-align: center;">C</p> <p>Again - There are two different answers for this question – Connexionz provides Passenger Counters, which will adhere completely to all of the functional requirements set out here.</p> <p>This will work through configuration of the Connexionz platform to the EXISTING Halo Passenger Counters on the Yakima buses.</p> <p>In the event that Yakima chooses for Connexionz to provide “NEW” Passenger Counters – we will install and configure to ALL of your functional requirements</p> <p>When cellular communications are lost, our system stores your APC data and uploads the data once communications are restored.</p> <p>The raw data supplied by our sensors is stamped with date, time, geo-coordinates, and bus stop locations.</p>
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	<p>vicinity of the doorway passengers between stops.</p> <p>9. Boarding and alighting counts shall only be recorded when the vehicle MDT is logged into the revenue service run. If there is a bus breakdown and passengers need to transfer to a replacement bus, this will allow the passenger transfer to be done with both buses logged out of the run so the transferring passengers are not erroneously double-counted.</p> <p>10. The percent error for boarding or alighting counts at a given doorway, measured at a given stop, shall be calculated as: absolute value of (measured count minus observed count) divided by (observed count). For example, if 7 passengers were observed boarding through the front door at the stop and the APC system recorded 8 passengers boarding, the percent error would be 1/7 (i.e., 14%).</p> <p>11. The average percent error for both boardings and alightings for each vehicle doorway shall be 5%, under the full range or ambient illumination conditions and for ambient temperatures.</p> <p>12. A sample of at least 50% error observations shall be collected at various revenue service stops, for both boardings and alightings at each vehicle doorway, and the average percent error for each sample shall be within the range 3% to 7%.</p> <p>13. The APC subsystem shall be interfaced with a wheelchair lift sensor, with the number of wheelchair lift operational cycles at each stop is also recorded.</p> <p>14. For each stop, a data record shall be created to store the number of boarding and alighting passengers for each doorway and the number of wheelchair lift activations.</p>		
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	<ol style="list-style-type: none"> 15. Each data record shall include the current GPS latitude and longitude (if the GPS receiver indicates that it currently has GPS lock), as well as the current date/time, block, vehicle number, vehicle operator ID, run number, route and trip number. 16. The date/time of any separate APC controller shall be updated at least one per day from the MDT. 17. Data records may be stored in either the APC controller or the MDT, with sufficient on-board memory capacity to allow for storage of at least 72 hours of APC data. 18. On-board memory shall be non-volatile storage so that a power supply is not required to retain the stored APC data records. 19. The APC controller shall be connected to the MDT to support annual and as-needed calibration of the doorway sensors and review of stored data records. 		
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C. APC Installation Requirements

	<ol style="list-style-type: none"> 1. APC sensors shall be mounted to avoid any protrusions into the doorway passage, with sealed windows for the infrared beams. 2. Cabling to the doorway sensors shall be shielded and routed to avoid sources of electromagnetic interference, such as fluorescent lighting ballasts. 3. The doorway sensors and APC controller shall be mounted in locations that are not accessible to the driver. 4. The alignment of the doorway sensors shall be calibrated after installation, to establish the alignment settings for each vehicle that achieve the most accurate performance (and the calibration settings for each vehicle shall be documented for future reference by Yakima Transit). 	<p>C</p>	<p>As prior answers show – if Connexionz installs new, all requirements will be completed. If current APCs remain, Connexionz will audit to ensure that all of the positioning required will be met, including the possibility of calibration, or moving of sensors.</p> <p>Our IRIS sensors are flush mounted and all wiring is hidden.</p>
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D. APC Test Requirement

	<ol style="list-style-type: none"> 1. The Test Procedures shall be prepared by the Contractor and accepted by Yakima Transit prior to the start of any acceptance testing. The Test Procedures shall define which specification performance requirements are to be demonstrated through each of the following stages of acceptance testing. The Test Procedures shall define for each performance requirement the test stage, test procedure and the test result that would constitute a successful demonstration of the performance requirement. 	<p>C</p>	<p>All Testing procedures will be best practices in Transit, and available for contractual Acceptance. In addition – Connexionz will be in constant communication with Yakima Operations group to ensure that all activity is working toward optimal goals for both organizations.</p>
<p>E. Factory Acceptable Testing</p>			
	<ol style="list-style-type: none"> 1. Factory Acceptance Testing shall be completed prior to any installations of the APC subsystem. 2. Factory Acceptance Testing shall use a complete bench test configuration for the APC subsystem that would be installed on a single vehicle, at a facility provided by the Contractor such as their factory. 3. The bench test configuration shall include at minimum the following components: (1) doorway sensors installed in two doorway passages with dimensions corresponding to the doorway passages in the actual Yakima Transit vehicles to be used; (2) integration of the doorway sensors with the APC controller and MDT (or directly with the MDT), to allow the boarding and alighting counts for test passages through each doorway to be reviewed; and (3) integration with simulated doorway closure sensors. 	<p>CM</p>	<p>Factory acceptance testing is used mitigating risk for technology developments where there is a high level of untested innovation.</p> <p>Our system is a commercial off the shelf system. It performs flawlessly on all our customers’ fleets. Collectively our customers deliver over 32 million trips per year.</p> <p>With this in mind, we have found from experience that the most cost effective and time efficient way to mitigate risk is to run a pilot as part of our deployment plan.</p> <p>Therefore we load your network into our system, install our system on one of your vehicles, and then run it along one of your routes.</p> <p>Then you can see and confirm that everything is working as it should before we fit out the rest of your fleet.</p>
<p>F. Proof of Performance Testing</p>			
	<ol style="list-style-type: none"> 1. Proof of Performance Testing shall be completed after APC subsystem installation for each vehicle. 2. Proof of Performance Testing shall use the complete 	<p>C</p>	<p>From experience we carry out tests at each step of installation.</p> <p>In this way, we can minimize the complexity of troubleshooting if something isn’t functioning properly.</p>

	<p>configuration for the APC subsystem installed on each single vehicle, at the vehicle installation facility provided to the Contractor by the Yakima Transit.</p> <p>3. The installed vehicle configuration shall include at minimum the following components: (1) doorway sensors installed and calibrated in all doorway passages; (2) integration of the doorway sensors with the installed APC controller and MDT (or directly with the MDT), to allow the boarding and alighting counts for test passages through each doorway to be reviewed; and (3) integration with the doorway closure sensors.</p>		<p>In addition – Connexionz will show in our Project Plan, proper procedures and time needed to perform all testing, including this.</p> <p>Our system does not rely on the MDT to carry out a lot of the functionality required.</p> <p>Our Medius VLU provides a lot more processing power than what the usual Android or iOS tablet can provide.</p>
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G. Subsystem Integration Testing

	<ol style="list-style-type: none"> Subsystem Integration Testing shall be completed after the APC subsystem has been integrated with the on-board and central systems. Subsystem Integration Testing shall use the APC subsystem installed on all equipped vehicles, with the central system at Yakima Transit. The installed test configuration shall include at minimum the following components: (1) integration of the doorway sensors (and any APC controller) with the MDT, based on the standard SAE J-1708/J-1587 or J1939 VAN on the vehicles; and (2) integration with the cloud capabilities for bulk data exchange with vehicles and for performing post-processing and reporting for APC data. 	<p>C</p>	<p>Again - All Testing procedures will be best practices in Transit, and available for contractual Acceptance. In addition – Connexionz will be in constant communication with Yakima Operations group to ensure that all activity is working toward optimal goals for both organizations.</p> <p>In addition – Connexionz will show in our Project Plan, proper procedures and time needed to perform all testing, including Subsystem Integration Testing.</p>
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5. APC Back Office Reporting

A. Functional Requirements

	<ol style="list-style-type: none"> The passenger count information received from each vehicle must be used to generate reports for Yakima Transit. Yakima Transit prefers that this functionality reside within the CAD/AVL component 	<p>C</p>	<p>Managing on-time performance, driver behaviour and NTD reporting are common tasks that our customers perform. Our system provides a set of standard reports that easily enables you to perform these tasks too.</p>
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	<p>and not a separate APC data software module.</p> <ol style="list-style-type: none"> 2. Contractors shall describe the reports available from the passenger count data and provide sample reports in the proposal. 3. At a minimum the following reports shall be available from the passenger count data: <ol style="list-style-type: none"> a. Count of passengers on and off at a specified stop by: <ol style="list-style-type: none"> i. Time of day ii. Day of week iii. Specific day, week, month, or year b. Ridership by: <ol style="list-style-type: none"> i. Route ii. Trip iii. Day of Week iv. Specific day, week, month, or year 4. An option should be included to allow users to adjust the APC counts in the database if erroneous data is detected by the user. 		
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6. Passenger Wi-Fi Hotspots

A. Functional Requirements

	<ol style="list-style-type: none"> 1. The proposed system shall include a Wi-Fi hotspot to provide passengers with Internet service for the duration of their trip. 2. The Wi-Fi device must work with Yakima Transit’s current cellular provider – Verizon Wireless. 3. Yakima Transit should be able to configure the Wi-Fi hotspot with regards to the following: <ol style="list-style-type: none"> a. Content blocking. b. Time limits for users. c. Timeout period for inactivity. d. Bandwidth throttling to ensure primary on-board systems have adequate bandwidth. 	<p>C</p>	<p>It is our understanding that Yakima will be installing new Cradlepoint Routers, to which the Connexionz MDT and Medius can be configured.</p> <p>Given that the routers are yours – and that you have the Verizon Wireless account plan – Customer Hotspots will be available.</p> <p>Connexionz will help in the project plan to ensure that all requirements are accomplished according to the wishes of Yakima Transit.</p> <p>The ability to configure “content blocking” – time limits, inactivity time outs and throttling, should be a function of the Cradlepoint portal, as part of the subscription for your routers. Connexionz has extensive experience with Cradlepoint systems, and will work with you to ensure your parameters are met and in consistent use.</p>
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7. Passenger Information Systems

A. Passenger Information Portal (Website / Mobile App) Functional Requirements

<ol style="list-style-type: none"> 1. The Passenger Information Portal is defined as a website and/or mobile application that allows passengers to get real-time bus information, departure times and bus locations on either a desktop PC or mobile device such as a tablet or smartphone. 2. Passenger Information Portal must utilize the latest in responsive website design that can automatically accommodate various screen sizes ranging from smartphones, to tablets to desktop PCs. 3. Passenger Information Portal must be allowed to integrate with Yakima Transit website (www.yakimatransit.org) to allow users to access the portal from Yakima Transit website. 4. Passengers must be able to access real-time bus schedule information on the portal including map views, an integrated trip planner, and static schedule information for their chosen route(s). Bus location positions (icons) should update without the need for refreshing. 5. The Passenger Information Portal must provide Riders with access to Yakima Transit's posted schedule. Users should be able to select a day in the future and have the system display the standard, posted departure times for the route specified. 6. The passenger information system must actively receive static route, schedule, and stop information from the scheduling/CAD/AVL system so that changes to route locations, stop locations, and bus schedule times are automatically propagated to the passenger information system without administrator involvement. 	<p>C</p>	<p>We have a white labeled mobile app as part of our standard offering to meet this requirement.</p> <p>We have reviewed your website and are confident that we can meet your look and feel expectations. The app will give your customers the ability to receive information and to provide feedback.</p> <p>All requirements for your Passenger Information Portal, Website and Mobile app is under the compliant category.</p> <p>Passenger Portal responsive design – YES</p> <p>Integrate with Yakima Transit Website – YES</p> <p>Real Time Schedule Access – YES</p> <p>Trip Planner -- YES</p> <p>Access to Schedule – YES</p> <p>Vehicle locations update without refresh -- YES</p> <p>Posted Schedule – YES.</p> <p>The posted schedules for all Yakima routes will be available on the website at all times.</p> <p>Real Time – YES</p> <p>Route changes automatically propagate -- YES</p>
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<p>7. Passengers must also be able to see the real-time position of buses on temporary route segments that were created in the scheduling/CAD/AVL system for detours or service interruptions.</p> <p>8. Users must be able to click on the transit map and see the location of all vehicles currently on the selected route (or routes) in real-time, and the direction they are traveling. Users must have the ability to select one, some, or all routes on the map that they wish shown, and each route should be drawn in a separate color.</p> <p>9. The user must be able to click their mouse pointer on any bus and see its route identifier, bus #, and arrival information for that vehicle’s next few stops. ETAs to the next few (configurable) down-line stops should be displayed. If the bus is equipped with APCs the bus information should also include the current passenger load of that bus.</p> <p>10. Hovering the mouse pointer over any bus stop must return the next few buses to arrive through the stop. Shared stops (those on multiple routes) should be clearly shown as such. ETAs must be provided for each bus enroute to that bus stop (e.g.: if two buses are on their way to a bus stop, there shall be two arrival time predictions).</p>	<p>See vehicles on temporary route segments -- YES</p> <p>Route selection and vehicle visibility - YES</p> <p>Color coding routes -- YES</p> <p>Next Stops Hover – YES</p> <p>This information is available to your Dispatchers but not to the travelling public in this way.</p> <p>Bus stop hover with information – YES</p> <p>Our customer app also provides color coded traffic congestion levels on routes, road works information where it is available.</p> <p>GTFS-RT is fully supported within our system and there is no need to use other tools to generate feeds for external parties. This is an out-of-the-box feature.</p> <p>GTFS static is fully supported within our system and there is no need to use other tools to generate feeds for external parties. This is an out-of-the-box feature that automatically becomes available every time a schedule is imported.</p> <p>Through the Connexionz Passenger Information Portal – it will work directly with the Yakima Website</p> <p>Passengers will be able to access accurate. Real time information, including a map view, complete trip planner. Your patrons will also be able to</p>
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		<p>choose their routes, and receive current “next stops for each route chosen</p> <p>As the routes are updated, - the website will be updated. There are provisions for schedule and route changes, and posted at later dates, (for example – holiday changes) – the website will update automatically as Route Manager updates.</p> <p>With the Connexionz Web Interface – passengers will always see “real time” bus positions. When routes are changed for detours, or service interruptions – Route Planner will update the entire system as it posts, within 24 hours of change.</p>
<p>B. Subscription Alerts and Notifications Functional Requirements</p>		
	<ol style="list-style-type: none"> 1. Passengers must have the ability to sign up for a user account in order to configure and receive transit bulletins, or departure alerts for stops and routes they are interested in. 2. Passengers who sign up for a rider information account must be able to receive automatic transit bulletins and notifications for the specific routes they wish. 3. Once created, passengers should be able to easily log into their account using their existing Facebook or Google accounts. 4. Passengers must be able to choose to have their notifications delivered via SMS text message, voice call (with optional IVR), or email. 5. Passengers must be able to configure their notifications to be a single use, or a recurring alert for their daily commute 	<p>Text Sign Up – YES</p> <p>Bulletins - YES</p> <p>Login with Facebook or Google - NO</p> <p>SMS – YES</p> <p>SINGLE OR RECURRING – YES</p> <p>Ad hoc service alerts and announcements are supported. None of our customers have ever requested canned announcements before as their announcements are quite brief and usually unique.</p> <p>CM</p> <p>In addition, all of the subscription alerts and notification functional requirements are compliant under the Connexionz Platform entirely.</p> <p>On the website, as the patron signs up for SMS – they will receive all notifications, based on routes which they subscribe.</p> <p>Your riders will easily be able to login to their account on the website, and can receive notifications based on their stops, and routes of interest.</p> <p>These notifications can be presented in different ways depending on their selections. They can view notifications on their smartphones when they access the app or have notifications pushed to them via SMS texts or emails.</p>

C. SMS Real-Time Information - Functional Requirements			
	<ol style="list-style-type: none"> 1. Passengers must be able to text message Yakima Transit using a designated five or six digit SMS short code. 2. Once the bus stop code and route number is texted to the designated number, the system must automatically return the route departure times of the next 3 buses leaving that stop, using real-time information for those buses within the prediction window, and scheduled times for those buses outside the real-time window. 3. SMS users should be able to get up to the minute information quickly without needing to repeatedly text the route number and stop code. 	C	
D. Integrated Trip Planner Functional Requirements			
	<ol style="list-style-type: none"> 1. The Passenger Information Portal must include an integrated Trip Planner. Passengers must be able to enter a starting location, ending location, as well as departure or arrival days and times then the Trip Planner will return transit trip options available to the rider and highlight their route on a map. When entering starting/ending locations, the system should not require the user to know the exact address, but be able to provide a list of closest matches based on a descriptive name (e.g. YVC, Walmart, etc.). User should be able to save their favorite locations, routes or stops. 	C	<p>Integrated Trip Planner on Website – YES</p> <p>Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution</u> in both Route Planner/Dispatch and all Web Tools</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
E. Portal Administration Functional Requirements			
	<ol style="list-style-type: none"> 1. Authorized Yakima Transit administrators shall have access to the passenger information portal configuration settings. Portal configuration settings must allow the administrator to specify: <ol style="list-style-type: none"> a. Display units (i.e. standard or metric) b. How many bus stop times (1-4) will be shown 	CM	<p>Administration Access to Portal – YES</p> <p>Display Units – YES</p> <p>Stop Times - YES</p> <p>Restrictions for Location Searches - YES</p> <p>Default Location – YES</p>

	<ul style="list-style-type: none"> c. Country restrictions for location searches d. Define default location when a user’s smartphone has its geolocation disabled e. Real-time information refresh rates <ol style="list-style-type: none"> 2. The Administrator shall be able to configure how the portal will be displayed, and at a minimum provide the ability to: <ul style="list-style-type: none"> a. Import logos to be displayed on the browser header b. Import icons to be displayed when users add the webpage link to their mobile device home screen. c. Specify footer content d. Specify colors for visual elements on the web page (e.g. text, background color, button color) e. Specify if display patterns, real-time bus capacity and traffic layers are to be shown. 3. Administrators shall be able to configure and select display icons for up to five additional navigation menu links that can be used to open an external page or custom page. 4. Administrators shall have the ability to enable the SMS function and configure settings in such areas as, provider details, response length and timeout duration. 5. An optional IVR function should be available complete with the ability to configure voice and language selection, and maximum route and bus time announcements. Administrators shall be able to manage the messages users will hear. 6. Google Analytics - System must support the ability to track website usage, trends and all other information collected by Google Analytics. 7. A tool must be provided that allows Yakima Transit to export 	<p>Real Time Refresh Rates – YES</p> <p>Site Configuration – YES with limits</p> <p>Import Logos - YES</p> <p>Import Icons – YES</p> <p>Specify Footer Content – YES</p> <p>Colors – YES</p> <p>Patterns – YES</p> <p>ICONS for additional Links – YES</p> <p>SMS function configurable - YES</p> <p>IVR – YES</p> <p>Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</u></p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p> <p>Google Analytics - YES</p>
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	<p>schedule data in the general transit feed format (GTFS) for integration with Google’s Trip Planning web site, as well as 3rd-party developers who adhere to the GTFS format.</p> <p>a. The export function must include a validator to ensure the data is compliant with current GTFS format standards.</p>		<p>No tool is required as once the system is configured, the GTFS feed works automatically without any manual intervention required.</p> <p>A validator is built into our system.</p>
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F. Real-Time Informational Signs (Optional) Functional Requirements

	<ol style="list-style-type: none"> 1. Passenger information system shall provide real-time bus arrival information through the use of signage system. <ol style="list-style-type: none"> a. The signs shall be installed at the Agency transit center. 2. Information on the signs must be fully integrated and in coordination with the other Passenger Information Systems (website, mobile app, etc.) using information from the on-board CAD/AVL system. 3. The signs shall be in compliance with the Americans with Disabilities Act (ADA). 4. The system shall include predictions about arrival times, as well as information about the nature and causes of disruptions. Signs shall meet indoor and outdoor illumination standards and be in weatherproof casing and have internal temperature and humidity control. 5. The signs shall be capable of displaying the destination of the route, route name, and estimated arrival times. These signs shall also be capable of displaying the current time, and a text message entered by a dispatcher or system administrator on one line, in case of emergency or an unforeseen event. 		<p>Real Time Bus Arrival on Signs - YES</p> <p>Sign Information – Fully coordinated – YES</p> <p>ADA Compliant – YES (depending on current sign status at transit center).</p> <p>System is GTFS-RT out of the box – So predictions are accurate in real time</p> <p>Weather Control – YES</p> <p>Sign Display Capabilities – Fully Configurable - YES</p> <p>Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution</u> in both Route Planner/Dispatch and all Web Tools</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
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8. Computer Aided Dispatching (CAD) Software System

A. Vehicle and Driver Management Functional Requirements

	<ol style="list-style-type: none"> 1. Agency staff will dispatch the fixed route vehicles from a central office using this 	<p>C</p>	<p>Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution</u> in both Route Planner/Dispatch and all Web Tools</p>
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	<p>software solution. They must have the ability to:</p> <ol style="list-style-type: none"> View all the transit Agency work for a specific day. The work can be viewed in a calendar and table view. View work assignments for drivers for a specific day Assign and re-assign work to employees: By using drag and drop functionality, the dispatcher can assign and re-assign work to any employee. Split and re-assign work to an employee Modify or cancel work View when drivers are absent View in real time the work that has been completed (and still needs to be completed) The system should provide an alert for the User if there is any unassigned work. 		<p>Agency Work for a Single Day – YES</p> <p>Assignments for specific day – YES</p> <p>Reassign Work to Employees - “DRAG AND DROP” - YES</p> <p>Reassign and Split – YES</p> <p>Modify or Cancel – YES</p> <p>Absent – Drivers Log in – So absent, does not</p> <p>Real Time work – YES</p> <p>Unassigned – YES through Filtering</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p> <p>Our Computer Aided Dispatch (CAD) application helps dispatchers set up their operational workday. Our user interface allows your team to identify what needs working on at a glance, and we give your dispatchers the tools to resolve any operational disruptions that may arise. Please refer to the resume section in our response for full details on our CAD Software solution.</p>
	<ol style="list-style-type: none"> User will be able to perform assignment functions on behalf of the driver (log on/off, pull in/out, stopping an assignment). User can allow a vehicle to become non-schedule or non-route adherent. This is available for the entire route or just a segment of the route and for a given duration (pattern detours). View vehicle details including make, model, year, VIN, license plate, and notes. 	<p>C</p>	<p>Assignment Function – YES</p> <p>Schedule Adherence – YES</p> <p>Year Make Model – YES (Configurable?)</p> <p>Plus - <u>All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</u></p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
	<ol style="list-style-type: none"> A vehicle list must be available that allows the user to: <ol style="list-style-type: none"> View the status of a vehicle (logged on, logged off, pulled out, on assignment) Determine who is logged on that vehicle 	<p>CM</p>	<p>Vehicle List - YES</p> <p>Status – YES</p> <p>Logged Driver – YES</p>

	<ul style="list-style-type: none"> c. View the route the vehicle is on d. Determine the schedule and route adherence 6. Users must be able to manage vehicle peripheral equipment integration, such as the ability to add pattern point actions to waypoints and bus stops to trigger annunciators and on board signs. 7. An employee list must be available that allows the user to: <ul style="list-style-type: none"> a. View the status of an employee (logged on, logged off, pulled out, on assignment) b. Determine the vehicle the employee is driving c. View the route the vehicle is on d. Determine the schedule and route adherence 8. Users must have the ability to manage employee absences (vacation, sick days, personal leaves, etc.). If work has been assigned to an employee during the period they have been marked absent, the system will automatically un-assign that work. 		<p>Route View for Vehicle - YES</p> <p>Schedule Adherence - YES</p> <p>Pattern Point Actions – triggers – board signs – YES through Route Planner</p> <p>Employee Status – YES</p> <p>Vehicle Driving - YES</p> <p>Route and Schedule Adherence – YES</p> <p>Employee Management – NO</p> <p>Dispatch is Vehicle Centric – So the platform shows who has logged in – would be cross referenced with Employee list.</p> <p><u>Plus - All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</u></p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
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9. Event Management

a. Functional Requirements

	<ul style="list-style-type: none"> 1. The System must support the creation of events which can be tracked and managed by Dispatch when they occur. 2. As a minimum, the system must support the following types of automatically generated system events: <ul style="list-style-type: none"> a. Emergency Button Broken b. Geofence Entry c. Idling d. Passenger Volume e. Silent Alarm f. Speeding g. Vehicle Off Route h. Vehicle Running Early 	<p>C</p>	<p>Event Creation in Dispatch - YES</p> <ul style="list-style-type: none"> a. a. Emergency Button Broken - YES b. Geofence Entry - YES c. Idling - YES d. Passenger Volume - YES e. Silent Alarm - YES f. Speeding - NO g. Vehicle Off Route -- YES
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<ul style="list-style-type: none"> i. Vehicle Running Late j. Unauthorized Vehicle Movement k. Yard Alarm l. Work started early/late <p>3. In addition to system events, other users must be able to create an event, such as Dispatchers and driver/operators via their in-vehicle MDT.</p> <p>4. Events must be able to be assigned to a specific dispatcher and be modified, resolved and closed by a dispatcher. All transactions done on the event must be logged.</p> <p>5. During system setup Yakima Transit should have the ability to configure events in a number of ways, including:</p> <ul style="list-style-type: none"> a. Includes type, color coded priorities, description, notes, and open/close/clear statuses b. The foreground, background and bold attributes of an event will be configurable and change based on an event’s current information (including status, priority, and event type) c. Configurable parameters must include time to hold event on screen after being closed and last xx hours of events to be loaded when application runs d. Configuration support must be included for emailing internal staff or managers when an event occurs. e. Display different events to different groups of users (supervisors, dispatchers, etc.) <p>6. When an event occurs the Dispatcher obtain details on the event by locating the event and/or vehicle through right click menu options on the event and following the vehicle on the map.</p>	<ul style="list-style-type: none"> h. Vehicle Running Early _ YES i. Vehicle Running Late - YES j. Unauthorized Vehicle Movement - YES k. Yard Alarm - NO l. Work started early/late - YES <p>Event creation from within a bus MDT - NO</p> <p>Assign Event to Dispatcher - NO</p> <p>Color Coding Event Priorities – YES</p> <p>Foreground and Background Color Configurable – NO</p> <p>Time Out Codes Configurable – NO</p> <p>Management Email Alert Configuration – YES</p> <p>Supervisor Level Email Alert Configuration - YES</p> <p>Event Following Vehicle thru menu options- YES</p> <p>Silent Alarm Priority – YES</p> <p>Dispatchers must manually clear alarm -- YES</p> <p>Where we comply these functional requirements are out of the box features - fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</p> <p>In addition, more information and graphic representation of compliant functionality are included in the narrative of the RFP response</p>
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	<p>7. A Silent alarm on a vehicle must be supported as a priority event. When a vehicle sends in a silent alarm Dispatch must acknowledge or clear the alarm and the event status will be modified accordingly.</p>	<p>Plus - Covert emergency alarms are an optional feature that can be and frequently included as part of our offering. Providing an “open-mic” capability will depend on whether your mobile radio units have been programmed to support this feature, then this is certainly possible.</p> <p>If they haven’t, then your mobile radio vendor will need to implement the programming. Our MDT does not have a subtle visual cue to assure the driver the alarm has been activated because it places the driver at greater risk. It is the same reason why headsign vendors do not have any indication within the bus when the “Call 911” message has been triggered on external signage.</p>
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10. Text Messaging

A. Functional Requirements

	<ol style="list-style-type: none"> The system must be able to support sending text messaging to/from the MDT on a vehicle, group of vehicles, or all vehicles. Messages can be sent from the dispatcher to MDTs or to other dispatchers. Message can be configured to require accept/reject, yes/no, numeric or acknowledged responses. Free form text messages must be supported between dispatchers and to vehicle MDTs. Messages on the dispatch application should be grouped by conversation. Dispatcher must be able to receive canned messages back from vehicle MDTs. Dispatcher should be able to locate vehicle/driver who sent a text message. 	<p>C</p> <p>Text Communication between Dispatch and MDT - YES</p> <p>Messages from Dispatch to MDTs or other Dispatchers – YES</p> <p>Configurable Messages to require a set response - YES</p> <p>Free Form Text Messages – YES</p> <p>Messages to be Grouped in Dispatch – YES</p> <p>Canned Messages from MDT - YES</p> <p>Locate Driver who sent message - YES</p> <p>All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
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11. Transfer Protection

A. Functional Requirements

	<ol style="list-style-type: none"> The system must allow for one bus to send a transfer request to a second bus, instructing the second bus to hold for a defined amount of time (at a 	<p>CM</p> <p>We have a variation of this called Connection Protection – YES</p> <p>Connection Protection allows travelers to initiate a request for connection protection anytime during the trip using a personal device or on-</p>
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	<p>particular stop) to ensure a passenger transfer between the two buses takes place.</p>	<p>board equipment and receive a confirmation indicating whether the request is accepted. Connection protection uses real time data to examine the arrival status of a transit vehicle and to transmit a hold message to a vehicle or other mode of transportation (e.g. rail) in order for the traveler to make a successful transfer from one vehicle to another.</p> <p>The connection protection request is sent by the traveler, anytime during their trip, using a personal device or onboard equipment. The traveler will receive a confirmation message indicating whether the transfer vehicle will or will not hold.</p> <p>The requests can be viewed in our Dispatch tool messaging and the onboard MDT.</p>
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12. Vehicle History

A. Functional Requirements

<ol style="list-style-type: none"> 1. Dispatchers must be able to select a group of vehicles, a time range (start and stop time), a specified bus stop or set of stops, a specific map area, or individual drivers or a group of drivers. The system must then collect all vehicle location reports for the specified vehicle and time, color code the location reports based on route and schedule adherence and then display them on a map. Each vehicle's location reported on the map should include the date/time, vehicle speed and direction of travel. In addition, the ability to toggle status information such as schedule and route adherence must be available. 2. The system must include the ability to save and retrieve playback files for later use. 	<p>C</p>	<p>Put Vehicles in Groups – YES this is done through Insights.</p> <p>Reports for Group Vehicle Locations – YES based on filtering.</p> <p>Location – Date/Time/Speed/Direction - YES</p> <p>Schedule and Route Adherence to Toggle -</p> <p>Playback for later use – YES all are archived by date, etc.</p> <p><u>Plus - All of these basic features required are fully available as part of the Connexionz AVL Solution in both Route Planner/Dispatch and all Web Tools</u></p> <p>In addition, more information and graphic representation of this functionality are included in the narrative of the RFP response</p>
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18. Route Monitoring

A. Functional Requirements

<ol style="list-style-type: none"> 1. The Dispatch software must provide a convenient way for users to quickly look at many routes and determine overall vehicle spacing (headway) and schedule adherence. The 	<p>C</p>	<p>Route Bar for Each Direction – YES</p>
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	<p>following functionality is required with this tool:</p> <ol style="list-style-type: none"> Show a route bar for each direction defined for a given route (if multiple directions are defined in a route’s schedule). Layer each pattern (for a given direction) on to the same route bar. Time points for all patterns (for a given direction) must be evenly distributed along the route bar. Provide arrows at the start of a route bar to show the next pending blocks (up to 3) to travel along the indicated route bar within the next hour. Hovering the mouse over a pending block should reveal additional details, such as the scheduled start time, vehicle ID, and employee’s name. Hovering the mouse over a vehicle should reveal details such as the current driver, current vehicle ID performing the work, schedule adherence, and the time points associated with the vehicle. Users should have the same functionality available to them that is available on the map when right clicking on a vehicle (e.g. Locate, follow, etc.). Individual users should be able to make their own route color coding and sorting preferences and have them stored in the application for their next use. Headway alerts should appear in the route monitor window to alert dispatchers of bunching issues. 	<p>Layer Each Pattern – NO – Patterns are shown by arrows</p> <p>Even distribution of time points along route bar – YES</p> <p>Arrows at start of route bar to show next pending blocks – NO – Connexionz sorts in various ways, so based on your parameters, you can show as many “pending” blocks as you wish</p> <p>Hovering Mouse functionality - YES</p> <p>Hovering Mouse functionality – YES - Configurable</p> <p>Same Functionality among users – YES</p> <p>Individual Color Coding – NO-</p> <p>Each individual can store sorting preferences -- YES</p> <p>Headway Alerts – NO</p>
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19. Scheduling Software – Route Definitions

A. Functional Requirements

<ol style="list-style-type: none"> 1. The system must provide a way to manage Yakima Transit’s bus stops: <ol style="list-style-type: none"> a. Bus Stop Importer: It must be possible to import a list of bus stops using a CSV file. b. Where Bus Stop data is not available to be imported, or to create new bus stops, it should be possible to click on the desired location on the map to create one. The address and latitude and longitude of the new stop should be automatically geo-coded and displayed. c. System must support entry of timepoint locations, stop locations, trip patterns, running times. d. System must support the import and/or creation of actions associated with approaching and departing from bus stops (e.g. annunciations, Next Stop sign announcement changes). 2. The system must provide a way to manage Yakima Transit’s service types: <ol style="list-style-type: none"> e. Define different types of service (regular service, holiday service, etc.). f. Define different patterns for these services (weekday, weekend, etc.). g. Define on which dates you will apply which type of service. 3. The system must provide a way to perform route and pattern management: <ol style="list-style-type: none"> h. Route and Pattern maintenance functionality should include a map for visual representation of routes and ease of creation. i. Manual Pattern Maintenance – Users must have the ability to: <ol style="list-style-type: none"> i. Create new routes and update exiting routes 	<p>C</p>	<p>CSV Importer – YES</p> <p>Routes can be created with a click – YES</p> <p>Timepoints – Stops – Patterns and Runtimes – YES</p> <p>Import/Creation of Actions - YES</p> <p>Different types of Service – Through Route Planner – YES</p> <p>Define different Patterns – YES</p> <p>Different Dates – YES</p> <p>Map Availability – YES through Route Planner</p> <p>Manually Create Routes – YES</p> <p>Create new routes and update existing ones – YES</p> <p>Create New Patterns or update existing ones - YES</p> <p>Multiple Patterns to single route – YES</p> <p>Color Code Patterns – NO Configurable.</p> <p>Configure Route line color, etc -- NO</p>
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	<ul style="list-style-type: none"> ii. Create new patterns and update existing patterns, including time points and stops iii. Assign multiple patterns to a single route iv. Assign pattern run time and running time exceptions v. Color code patterns vi. Route line color, route line thickness, stop color, stop shape, and stop size should be configurable vii. View pattern statistics, including distance, drive time, hold time, number of time points and stops and locations of action-point triggers. viii. View a pattern's route adherence corridor on a map and be able to modify it for each stop ix. View pattern statistics, including distance, drive time, hold time, number of time points and stops 		<p>Pattern Statistics – YES</p> <p>Modify a Route – YES</p> <p>View Pattern Statistics – YES - Configurable</p> <p>Our system can import fixed route schedules using GTFS. Following set up our system then becomes the source of truth of your transit network so there is no need for importing additional GTFS data unless you wish to display services from other transit providers on your rider-facing real time information displays. Our system richly supports GTFS, and since it is the source of truth, we are able to provide GTFS and GTFS-RT feeds to external parties out of the box, without needing to hire a third party to curate your GTFS information</p>
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20. On-Board Equipment Management

A. Functional Requirements

	<ul style="list-style-type: none"> 1. Users must be able to: <ul style="list-style-type: none"> a. Automatically import triggers associated with pattern and block item types (e.g. annunciations, Next Stop sign announcement changes). b. Associate annunciator messages to time points, stops, start and end tasks. c. Associate annunciator messages to specific times of day or a specific interval (e.g. to be played every hour). d. Associate selected other peripheral messages and commands to time points and stops, start and end tasks. 	<p>C</p>	<p>Import Patterns/Blocks - YES - Configurable</p> <p>Messages to Timepoints/stops/starts/end - YES</p> <p>Messages to specific intervals – YES</p> <p>Other peripheral messages – YES</p> <p>At the beginning of a project we will bring your stop data into our system. From there, usually our system will become the source of truth for your stop data and there will be no future need to curate this data within spreadsheets.</p>
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21. Interlining Schedules

A. Functional Requirements

	<ul style="list-style-type: none"> a. Users should be able to interline routes and have them display vehicle locations on the correct route on the AVL map. Schedule and 	<p>C</p>	<p>Route locations and changes to MDT - YES</p>
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	<p>route information must be pushed out to the vehicles so that the MDT will control any connected equipment appropriately, even on interlined routes.</p> <p>a. Connected peripheral equipment on the vehicles such as headsigs, fareboxes and annunciators should automatically switch to the appropriate actions for the new route based on vehicle location and work assignment, without operator intervention.</p>		<p>Connected peripherals auto switch based on location – YES thru Medius</p> <p>At the beginning of a project we will bring your stop data into our system. From there, usually our system will become the source of truth for your stop data and there will be no future need to curate this data within spreadsheets.</p>
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22. Scheduling Software Optional Features

	<p>1) Trip Generation</p> <ul style="list-style-type: none"> a. Runcutting b. Blocking <p>2) Rostering</p> <ul style="list-style-type: none"> c. Create and maintain rosters d. Associate drivers to rosters e. Manage employee vacation and sick days <p>3) Schedule Publishing</p> <ul style="list-style-type: none"> f. Schedule Generation g. Schedule Validation h. Emergency Schedules <p>4) Service Interruptions</p> <ul style="list-style-type: none"> i. Detour Management ii. Emergency Detours (Short Term) iii. Extended Detours (Long Term) 	<p>C</p>	<p>As Options – for Scheduling – working with Optibus – YES</p> <p>Trip Generation – YES</p> <p>Creating Rosters – Associating Drivers to Rosters YES</p> <p>Manage Vacation and Sick – YES – through matching up our system with your rosters</p> <p>Schedule Publishing – Generation/Validation and Emergency Schedules – YES</p> <p>Using your specific preferences and constraints, the optimization engine will produce an automatically validated vehicle and driver schedule in seconds to minutes. The system can optimize blocks and runs individually, or simultaneously.</p> <p>Detour Management – YES though Route Manager – Both Short and Long Term</p> <p>Service Interruption – All manageable through Route Planner - YES</p>
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23. Project Implementation, Training and Documentation

A. Project Management Functional Requirements

	<ol style="list-style-type: none"> 1. A new project manager may only be assigned with the approval of Yakima Transit. 2. The project manager should organize weekly conference calls to discuss the project progress, scheduling moving forward, and responsibilities. <ol style="list-style-type: none"> a. An agenda must be provided prior to each call. b. Meeting minutes must be provided following each call. 3. The project manager must provide an implementation plan that details the work to be completed and the parties responsible for each task. <ol style="list-style-type: none"> c. Please include a sample implementation plan in your response. 4. The project manager must provide and maintain a project schedule in a Gantt chart format. <ol style="list-style-type: none"> d. Please include a sample project schedule in your response. 	<p>Project Management – YES</p> <p>YES – Connexionz will assign a project manager for the Yakima Relationship with your approval.</p> <p>YES – per the Planned Implementation Schedule - Weekly conference calls on progress, etc. In addition, calls will be scheduled as needed or requested.</p> <p>YES – An Agenda will be provided prior to each call</p> <p>YES – Minutes will be provided after each call.</p> <p>YES – Connexionz Project Plan and Implementation Plan is presented in Project Implementation Approach page 15. Final Implementation Plan will be executed with full Yakima approval and continued communication.</p> <p>YES – The Connexionz Implementation Plan is presented in Project Implementation Approach page 15.</p> <p>YES – The Connexionz Gantt Charts presented in Project schedule page 17.</p> <p>YES – The Connexionz Proposed Project Schedule is presented in Project schedule on page 17.</p>
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B. Implementation Phases

	<p>The project will be implemented in a phased approach with milestones for each phase. Yakima Transit feels that a phased approach is essential to the successful implementation of an ITS system.</p> <ol style="list-style-type: none"> 1. Design Review 2. Functional Acceptance Testing 3. Pilot Program 4. Rollout 	<p style="text-align: center;">C</p> <ul style="list-style-type: none"> • Please review the Project Schedule found on page 17. YES – Milestones set by Connexionz are included. • Including Design – Functional Acceptance Testing – a Pilot Program, and final Rollout - • These milestones are based on our experience, and best practices – and will be reviewed and approved with collaboration by your group at Yakima Transit. <p>In summary – as the project schedule will show, Connexionz will work with Yakima through all of your requested phases of implementation. We do this all the time, and highly recommend it.</p>
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C. Design Review Phase – Functional Requirements				
	<ol style="list-style-type: none"> 1. A System Design Review shall be undertaken prior to taking delivery of System components. The Contractor shall review and document all Project Specifications and ensure that the goals of the RFP are met in the specification. 2. Yakima Transit and Contractor shall agree to the Project Specification prior to the Contractor commencing System Implementation. 3. Part of the Design Review will include an onsite visit from the Contractor, for a project review/kickoff meeting, site surveys and vehicle inspections. 	<p>C</p>	<p>The Answer is YES – please review the Implementation schedule, the project plan and Gantt Chart, for specifics.</p> <p>In short – the Connexionz secret is simple - commitment to strong communications with our customers. We are STRONG on Planning – STRONG on Clarification – STRONG on Listening – STRONG on Execution – STRONG on Reviewing – and STRONG on Adjustments as needed.</p> <p>All Project Planning will be explained, discussed and approved before execution. - YES</p> <p>YES – On site meeting/project review/site surveys and vehicle inspections will occur, as approved by project plan.</p>	
D. Functional Acceptance Testing Phase				
	<ol style="list-style-type: none"> 1. Contractor will perform an onsite Functional Acceptance Test of the System. 2. The Functional Acceptance Test Phase (FAT) will be an end-to-end test of the System using one fully installed vehicle in a controlled testing environment. 3. The Functional Acceptance Test will prove that the hardware and software provided (including customizations) meet the System Specifications of the project. 		<p>Functional Acceptance Test – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>One Vehicle as part of Functional Acceptance Test – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>Verify System Specifications – YES</p>	

	<ol style="list-style-type: none"> 4. Testing of the end-to-end system shall be conducted prior to going 'live' with any portion of the system. Test cases and documentation shall be developed to prove out all system components identified in the Design Review. The Contractor will develop all test cases and Yakima Transit and Contractor shall agree to the testing requirements prior to proceeding with testing. 5. Any issues that are identified with the System during the FAT will either be addressed immediately or with a resolution plan acceptable to Yakima Transit and the Contractor. At the conclusion of the FAT, Yakima Transit and the Contractor shall be confident that the System meets the requirements of the project and that any identified issues will be addressed to ensure the Pilot Phase is successful. 6. Contractor shall include a Functional Acceptance Testing proposal outlining philosophy, scope and resolution procedures, and account for the FAT as proposed in the Schedule Proposal above. 		<p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>Test Cases Developed and Approved – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in v</p> <p>Any issues to be addressed during FAT - YES</p> <p>Functional Acceptance Test – YES</p> <p>Philosophy, scope, and resolution procedures – are written as part of the our response below the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p>
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E. Pilot Program Phase Functional Requirements

	<ol style="list-style-type: none"> 1. The Contractor will perform an onsite pilot test of the system. 2. The Pilot test will be a live system test using a subset of the entire fleet (approx. 5-10% of fleet). The Pilot will complete end-to-end testing of the system under real-life working conditions so that any potential issues may be identified and addressed. Pilot testing shall be undertaken prior to full System rollout. 3. A resolution plan must be developed by the Contractor 	<p>C</p>	<p>Pilot Test – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15 and page 17.</p> <p>Any issues from Pilot Test Identified and Plan for resolution – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15 and page 17.</p>
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	and approved by Yakima Transit for all issues identified in the Pilot.		
F. Rollout Phase Functional Requirements			
	<ol style="list-style-type: none"> 1. After the successful Pilot phase, the remainder of the System Equipment shall be provided and installed. Vehicles shall be added to the live system as installations are completed. 2. Contractor shall continue to provide comprehensive support for the System during this phase. 	C	<p>Roll-Out Phase – remainder of the equipment to be installed – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>Roll-Out Phase – Continuous Improvement and Approval – YES</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p>
G. System Training Functional Requirements			
	<ol style="list-style-type: none"> 1. The Contractor must provide onsite personnel to perform the following training: <ol style="list-style-type: none"> a. Training must be provided in a manner that allows Yakima Transit to operate and maintain the system. b. The Contractor’s project manager must work closely with Yakima Transit’s project coordinators to ensure that all training and schedules coincide properly with system implementation activities and staff availability. 2. The Contractor must provide a soft copy of the original training workbook, suitable for copying, and written permission for Yakima Transit to make as many copies as necessary to train personnel and operate the system. 3. The Contractor needs to provide comprehensive training to: <ol style="list-style-type: none"> a. Dispatchers b. Schedulers c. System Administrators d. Bus Operators (train the trainer approach preferred) e. Management Staff f. Maintenance Personnel 4. Contractor should provide a training overview for each group listed above as part of this RFP response that includes: <ol style="list-style-type: none"> a. Description 	C	<p>Onsite Personnel for Training – YES</p> <p>Connexionz offers the finest personal training available in the industry.</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>Hands on Training – YES - That is the only way that we do it.</p> <p>Constant Project Management – YES</p> <p>Connexionz is in constant communication with Yakima Operations and Project Coordination.</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>All training materials will be available on line, and available for printing – YES</p> <p>Constant Comprehensive Training throughout the project and beyond – for ALL personnel – YES</p> <p>Including:</p> <ol style="list-style-type: none"> 37. Dispatchers 38. Schedulers

	<ul style="list-style-type: none"> b. Audience c. Format d. Equipment Required e. Prerequisite Knowledge f. Outline g. Duration h. Proficiency i. Timeline j. Listing of Documentation Provided <p>5. Online training must be available in the forms of webinars, videos and documentation.</p>	<p>39. System Administrators</p> <p>40. Bus Operators (train the trainer approach preferred)</p> <p>41. Management Staff</p> <p>42. Maintenance Personnel</p> <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>Constant Comprehensive Training Overview will occur – YES -</p> <p>Including:</p> <ul style="list-style-type: none"> 43. Description 44. Audience 45. Format 46. Equipment Required 47. Prerequisite Knowledge 48. Outline 49. Duration 50. Proficiency 51. Timeline 52. Listing of Documentation Provided <p>Per the proposed Project Plan and Implementation Schedule shown in Project Implementation Approach page 15.</p> <p>Training will be available as well online - YES</p>
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H. System Documentation Functional Requirements

	<ul style="list-style-type: none"> 1. The Contractor must provide the customer with documentation pertaining to the System. This documentation should include at a minimum: <ul style="list-style-type: none"> a. General Information. b. All documentation must be in English and reflect the most up-to-date version of the software. c. Driver manuals must be built using Microsoft Word and must be customizable at the discretion of Yakima Transit. d. Contractor must provide any and all documentation supplied with standard commercial equipment, as well as any and all documentation provided by third party suppliers. 2. Documentation <ul style="list-style-type: none"> a. Printed CAD/AVL Manuals, Training Manuals, Driver Manuals, and Functional Overviews must be provided. 	<p>YES – Connexionz will provide ALL documentation pertaining to our entire suite of solutions – including online service portal –and 24/7 personal technical support.</p> <p>YES – Connexionz will provide ALL documentation in English with the most up to date software version.</p> <p>YES – Connexionz will provide ALL driver manual in Word and customizable to your discretion at Yakima Transit.</p> <p>YES – All equipment will come with standard documentation – plus Connexionz keeps all product documentation on file for easy review</p> <p>YES – All Documentation will be available electronically as part of the Connexionz Client Portal</p> <p>YES – Connexionz will design, with Yakima’s collaboration and support – an optimal system</p>
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	<p>All documents should be available electronically from the Contractor.</p> <p>b. A comprehensive system binder for installation and maintenance must be included with the project that covers all aspects of the system and troubleshooting methods. Two copies need to be provided for maintenance personnel for on-going support. The system binder must include;</p> <ul style="list-style-type: none"> ii. System maintenance guide iii. Software application notes iv. Copy of all relevant software required from Contractor & back up procedures v. Descriptions and schematics of cabling and mounting <p>3. Context-sensitive online help system must be available to provide immediate assistance as dispatcher, schedulers and administrators need help. This online help should be available for the dispatch, administration and schedule modules of the software.</p> <p>4. In instances of software upgrades and/or enhancements, relevant documentation must be provided or made available electronically.</p>	<p>binder (two in total) - for installation and maintenance – including:</p> <p>System Maintenance Guide</p> <p>Software Notes</p> <p>Copy of Relevant Software - (though we are SaaS)</p> <p>Schematics and Cabling – as developed</p> <p>YES – The Connexionz Online Portal is available for training, documentation, and module updates – plus 24/7 personal client support is also available.</p> <p>YES – for all software, any upgrades will be accompanied by additional software product documentation and will be immediately updated online in the Connexionz Client Support Portal.</p>
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I. Warranty and Support

	<ul style="list-style-type: none"> 1. The Contractor shall provide Yakima Transit with a warranty schedule detailing the coverage for hardware defects and faults due to improper installation. 2. The Contractor should provide at a minimum the following System Support: <ul style="list-style-type: none"> a. 24x7 coverage for system critical issues. b. Regular business hour support for minor issues. c. Free software updates as they become available for proposed applications. 	<p>YES – All Connexionz software and products are warranted for five years.</p> <p>YES – Connexionz Client Success is available 24/7 for Critical Issues. In addition, our support professionals are immediately available directly by phone/email/text/ZOOM or TEAMS</p> <p>YES – Connexionz's regular business hours are in the Pacific Time Zone – the same as Yakima Transit</p> <p>YES – Connexionz SaaS updates automatically.</p>
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	<ul style="list-style-type: none"> d. Responsive support must be provided to requests that come through phone, fax, e-mail and a customer Website. e. Assessment process for escalating issues to the appropriate severity level. f. Contractor should indicate their standard warranty terms and conditions. 		<p>YES – Connexionz support is available through ALL methods. We will work with Yakima Transit to best understand how your group wishes to be communicated with in the most expedient way, and work accordingly.</p> <p>YES - The Connexionz Proposed Escalation Process is located in Project Implementation Approach page 15. The design is based on our best practices and will be put in service at Yakima Approval.</p> <p>YES – Our Warranty schedule is included in the presentation of our RFP response. Project Implementation Approach page 15.</p>
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J. Quantity of Systems

	<ul style="list-style-type: none"> 1. Provides for Yakima Transit an initial order of twenty-four (24) systems. Future orders will have a minimum quantity of one (1). 2. Deliveries will be scheduled by placing orders directly with the Contractor; and 3. Does not bind Yakima Transit to order more than the guaranteed initial order of twenty-four (24) systems during the term of the contract; and 4. Binds the Contractor to provide an initial order of twenty-four (24) and up to a total of thirty (30) systems over a possible five (5) year period from the signing date of the contract. 	<p>C</p>	<p>YES – Per the proposal and Pricing areas of the Connexionz RFP response. Should Yakima have changes to your requirements, we will work with you to position yourself in the best way.</p> <p>YES – Connexionz Project Management will work with Yakima Operations to ensure delivery in the most effective manner throughout the project.</p> <p>YES – Connexionz will work with you to ensure your initial order is best for your current and future requirements. Things can change, and we understand this.</p> <p>YES – Per the proposal and pricing structure, Connexionz will partner with Yakima to optimize your current and future fleet requirements, over the possible five year period from contract signing.</p>
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K. System Installation and Planning

	<ul style="list-style-type: none"> 1. Contractor will work with Yakima Transit on the location of equipment. 2. Contractor shall provide installation, documentation, maintenance and user training selected staff. 3. Contractor shall conduct final acceptance testing as deemed satisfactory by the Yakima Transit staff. 4. Working hours for this project are 7 AM – 8 PM daily, subject to change. 5. Yakima Transit will provide adequate space for the 	<p>C</p>	<p>YES - It is Connexionz goal to optimize the project while keeping Yakima current operations at their top levels – this means organizing equipment installations at times most advantageous to Yakima daily operations.</p> <p>YES – All Yakima staff will be provided installation documentation, maintenance and training, as decided by Yakima Operations in concert with Connexionz Project Management.</p> <p>YES - Per the Proposed Project plan in section Project Implementation Approach page 15.</p>
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	<p>Contractor to setup and store equipment.</p> <p>6. Contractor will provide Yakima Transit with serial numbers of the equipment installed in each bus.</p> <p>7. Yakima Transit will work with agency to establish buses being held for downtime.</p>	<p>YES – Connexionz Project Group will work under these parameters.</p> <p>YES – This space and understanding of your generosity is greatly appreciated. We will work with you in the instance that adjustments need to be made.</p> <p>YES – Connexionz will provide complete audit, as required by Yakima, and according to best practices.</p> <p>YES – Throughout the project, the key to success is constant communication, unity of purpose, and flexibility in the organization. Downtime buses here is an example of working together to optimize the schedule completion from both partners – Connexionz and Yakima Transit.</p>
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CAD/AVL System Overview

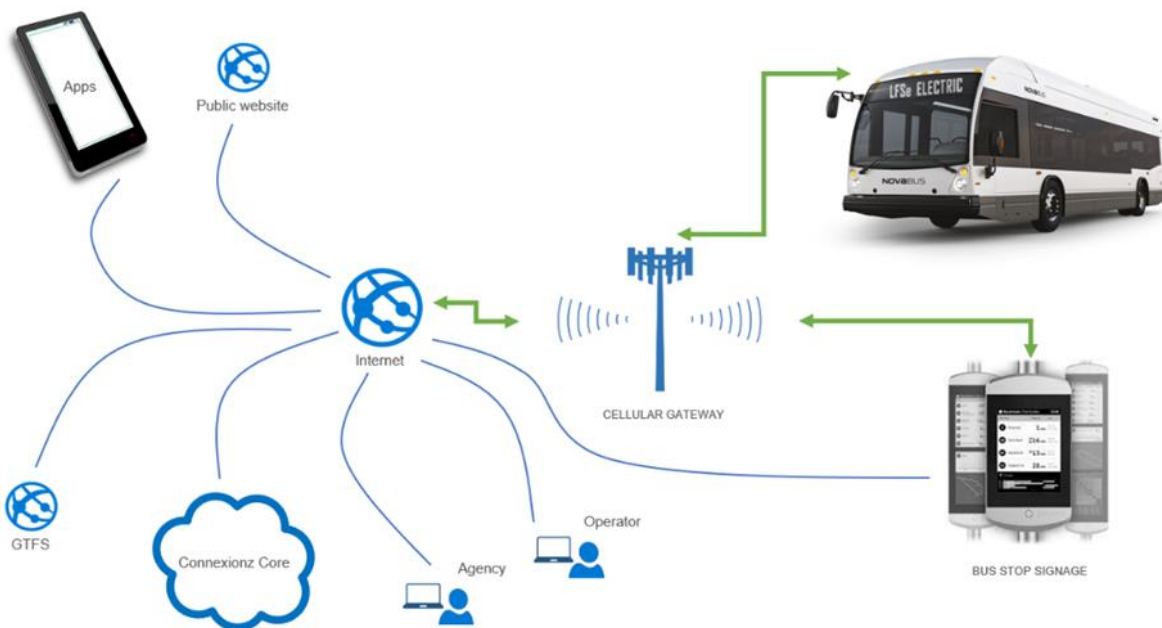


Figure 1 CNX System Overview Diagram

Our CAD/AVL intelligent transportation system (ITS) is cloud based and enables you to easily monitor and manage your operations anywhere, anytime. Being cloud based means that:

- Any features you have selected are automatically updated at no extra cost; and
- You can access our system anywhere from a browser.

We produce and use highly accurate GPS data to let you know where your vehicles have been, where they are, and where they will be in the future. This is the basis for all the tools and services that allow you to plan and implement new services, manage them once they go operational, keep everybody informed on how well they are performing, and allow your riders to plan and manage their journeys with confidence.

Automatic Vehicle Location (AVL)

Route Manager

Route Manager cloud software allows your team to configure and maintain information on routes, bus stops, traffic intersection configurations, buses, and schedules.

Existing routes can be imported into Route Planner. New routes can be built and configured to be exported to other applications. Route Planner simplifies the time needed to maintain your current routes and to design and implement new routes in-house.

- Stop changes and updates can be entered directly into the system quickly and in-house.
- Interlining between routes, stops, systems, and stations is easily visible and configurable.
- Location-based on-bus audio announcements can be edited and configured in Route Planner.
- Import and Export data from third-party software, including other GTFS feeds.
- Contains quick links to configure the GTFS and GTFS-RT feeds.
- GTFS and GTFS-RT data is automatically updated to reflect system changes, e.g., route, schedule, service calendar.

Other benefits include:

Route Manager simplifies the time needed to design and implement new routes and makes deploying service changes and detours simple.

Produces driver turn-by-turn instruction sheets in MS Word format, or the drivers can use the map view screen on the Driver console; MDT (mobile data terminal).

A valued asset management system that can be used to track relevant bus stop data such as shelters and seat information. When a bus stop is relocated, the update should be entered directly into the system. The system automatically updates third-party services by making any required changes to the GTFS feeds.

The map view highlights the selected route and provides a list of stops/platforms along the way with a separate properties pane showing details. A context menu allows new stops or route patterns to be created and modified.

Enables editing and configuring location-based audio announcements when used with on-bus next-stop announcement hardware.

Route Planner is used to organize all metadata for the latest GTFS specification. This includes route names, fare zones, and route colors specific to your agency. The City of Yakima will no longer need third-party software to manage or maintain GTFS data.

Managing Stop Signs

Connexionz uses stop numbers that contain a max of 9 characters made up of numeric and alpha values.

We will review your current data to determine whether these stop numbers meet the requirement, ensuring a smooth upload of your existing stop data.

Managing On-Street Signs

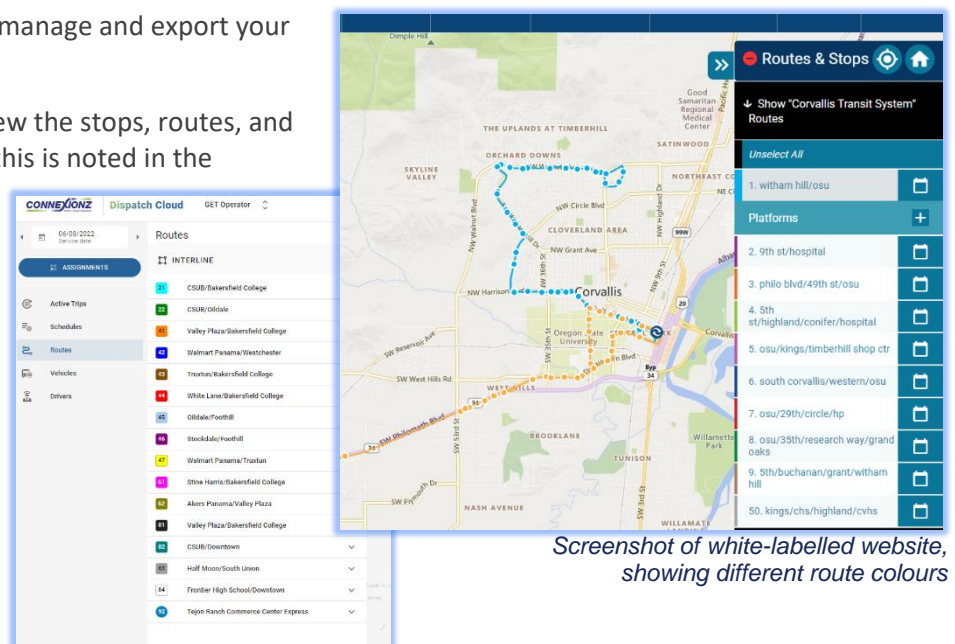
Any real-time display or announcement is entered at once using the sign management tool. The information is sent downstream to all systems, automatically Interactive Voice Response (IVR) data feeds, and the on-bus announcement systems. On-street signs can be configured using the ETA cloud to update individually or by route.

Managing Routes

Capturing precise GPS coordinates from the bus stop survey and maintaining routes in Route Planner is crucial for successful real-time data.

Route Planner application is used to manage and export your Google data.

We will schedule a workshop to review the stops, routes, and route configuration. More detail on this is noted in the project schedule phase.



Screenshot of white-labelled website, showing different route colours

Screenshot of Dispatch, showing different route colours

Users may zoom in on the route path for greater detail using the mouse. The route geodata is the physical path traveled by the route, also known as the route pattern.

The map window represents the route pattern as a series of interconnected lines or segments overlaying the road network, with arrows showing the travel direction.

Each route is displayed in grey and changes to black when selected in the menu. Color codes show the status of each stop/platform on the route. The green tick icon indicates the route stops at that platform; a red cross icon indicates the stop/platform is a 'candidate stop' (route passes by but may not stop); a clock icon indicates the stop is a time point; and a clock with the red icon shows the stop/platform is a schedule adherence point.

The Planner drags and places each node of the polyline using mouse and keyboard controls to draw a new route or amend an existing one. To demonstrate this, we show that one of the polyline nodes moved from Pages Road to a new position on Tomrich Street.

The route geodata is supported by metadata, which describes the route, direction, and name. This is displayed in the properties pane beneath the main window to the lower left, as shown below.

The Route Pattern Number and Name identifies each route. However, different physical paths can share the same route name and number. For example, there may be several paths travelled between stop locations. Each one has a different pattern name, but all share a common route name and number.

With Route Planner, detour routes can be easily drawn up and activated whenever required.

The screenshot displays the Route Planner application. The main window shows a map with several route patterns overlaid on a street network. A properties pane on the left provides details for the selected route, including its name, project, type, and scheduled time. A 'Routes' window is open in the foreground, showing a list of routes with columns for No., Name, Type, Fare Set, Color, and Text. The routes list includes various RTA and SCT routes with their respective platform names and status indicators.

No.	Name	Type	Fare Set	GTFS	
				Color	Text
9N	RTA - Paso Robles / Cuesta College North / San Miguel	Bus		6CAF2D	FFFFFF
9S	RTA - Cuesta College North / Paso Robles	Bus		6CAF2D	FFFFFF
10N	RTA - Santa Maria / San Luis Obispo	Bus		ED028C	FFFFFF
10S	RTA - San Luis Obispo / Santa Maria	Bus		ED028C	FFFFFF
10XN	RTA - Santa Maria Orcutt Express / San Luis Obispo	Bus		ED028C	FFFFFF
10XS	RTA - San Luis Obispo / Santa Maria Orcutt Express	Bus		ED028C	FFFFFF
12N	RTA - San Luis Obispo / Morro Bay / Los Osos	Bus		008A9E	FFFFFF
12S	RTA - Los Osos / Morro Bay / San Luis Obispo	Bus		008A9E	FFFFFF
14N	RTA - Government Center / Cuesta College	Bus		00AEEF	FFFFFF
14S	RTA - Cuesta College / Government Center	Bus		00AEEF	FFFFFF
15N	RTA - Morro Bay / San Simeon	Bus		7961AA	FFFFFF
15S	RTA - San Simeon / Morro Bay	Bus		7961AA	FFFFFF
21	SCT - Pismo Beach / Shell Beach / Grover Beach	Bus	1	9CC966	FFFFFF
23	SCT - Grover Beach / Oceano / Arroyo Grande	Bus			FFFFFF
24	SCT - Arroyo Grande / Pismo Beach / Grover Beach	Bus	1	EF674A	FFFFFF
25	SCT - Ramona Garden Park / Arroyo Grande High	Bus			FFFFFF
27	SCT - Grover Beach / Arroyo Grande / Oceano	Bus	1	40948D	FFFFFF
28	SCT - Grover Beach / Oceano / Arroyo Grande	Bus	1	47269A	FFFFFF
40	SCT - Pismo Beach / Avila Beach / Port San Luis	Bus		008095	FFFFFF
A	Paso Express - Route A	Bus	1	763A8C	FFFFFF
B	Paso Express - Route B	Bus	1	BB1E24	FFFFFF
dh	4th St yard to 8th @ Pine	Bus			FFFFFF

Route colours and text customizations are saved in Route Planner and disseminated to Dispatch, which is then picked up by Metrolink. The examples below are using Connexionz white labelled Website and Mobile App, Google Maps and Outdoor Display Signs.

Driver Interface (Mobile Data Terminal) (MDT)

With our MDT your Dispatchers and Drivers have another way to keep in touch with one another. Your drivers will have the comfort of knowing they are on the right vehicle and trip and a way to manually count passengers and fares.

Our MDT is the latest generation of rugged (IP 67 and MIL-STD-810G) Android tablets customized for us. It connects directly to the ignition for power and the router for connectivity. IP67 and MIL-STD-810G rating means it can handle high and low temperatures, large humidity variations and considerable vibration.

Our vehicle logic unit (The Medius) is responsible for all integrations between the MDT and other components of our system. This means all the system components communicate but any connectivity issues with the MDT won't affect the CAD/AVL system. The back-office software will continue to receive GPS pings and associate them with the intended blocks.



The unit locks snug in a tamper resistant dock which keeps it safe from the elements and any human obstruction, vandalism, or theft. It includes a direct connection to the router/switch onboard as well as the vehicle 12/24v power. Driver login and validation.

- Manual passenger counts
- Manual fare counts
- Route/run paddle information.
- Schedule adherence.
- Live map view of route pattern.
- Text-based messaging.
- Visibility of on-time performance and off-route incidents.
- Real-time load correction/APC override.

Computer Aided Dispatch Software (CAD)

Computer Aided Dispatch is a web-based software application that enables Dispatchers to accurately monitor and manage fleet activity in real time. Dispatch allows system users to review real-time operations plus replay historical data.

Dispatch has a fantastic design that makes it easy to zero in on what needs your attention and gives you the tools to quickly resolve any operational disruptions.

Monitoring	Monitor all fleets operations in real-time, at a glance. Monitor alerts and alarms from onboard system. Filter trips which might be late, early, or off route.
Tracking	View vehicle position, speed, and on-time performance. View by individual vehicles or stops, by trip, by route, or entire. Fleet management.
Management	Manage route and stop information including timepoints, stops on route, or flag stops. Assign vehicles to routes, blocks, trips, etc.

Messaging	Pre-defined text messaging to Mobile Data Terminals (MDT's). Respond to on-time performance, off-route activity, and covert alarm incidents.
Analysis Reports	View and generate a wide array of system analysis reports. Enter exceptions and notes to audit to OTP reporting. Utilize passenger counts, mileage, and stop based reports for service planning and the NTD.
System Controls	Distribute important service alert information to the public. Set system to schedules or headway times. Control of electronic displays (LED/LCD) and ad-hoc messages.

Supervisory, management, and operator staff can access Dispatch when on the road via your Verizon cellular broadband network and an internet connection.

Information is displayed in tabular and map views, and both can be configured to suit the specific dispatcher or supervisor using the program. All vehicles, whether fixed-route or support vehicles are shown on the map, while more detailed information on fixed-route trips appears in a "list" view.

Open Street map's professional series, Geographic Information System (GIS) data, is used to power geolocation-based applications. This mapping data doesn't cost you any extra licensing.

Unlike competing GIS data and public systems such as Google maps, OpenStreetMap GIS data includes map layers, road layers, road speed layers, and sites of local importance. Interactivity features set the bar to provide dynamic maps on the web.

OpenStreetMap updates its dataset at least once a quarter (Google updates, on average, once every 18 months) and is considered the leading tool for all mission critical, geo-location, and fleet management applications. We import a selection of GIS and SHAPE files from third-party GIS systems.

Automatic Voice Announcement (AVA)

Automatic Voice Announcement (AVA) will be performed by the Medius. The Medius is equipped with public address power amplifiers that directly connect to the internal vehicle speakers.

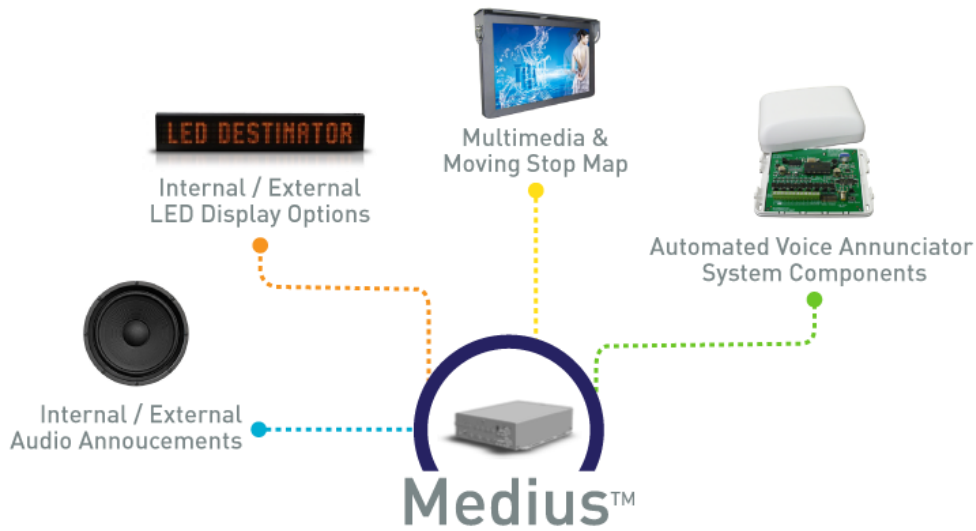
The Medius will use a Text-to-Speech (TTS) engine to synthesize voice announcements that will be played directly through the vehicle speakers. The control system can project automatically using TTS but also accept recorded announcements. We can offer alternative languages as an option.

AVA will be configured through the Route Planner tool and will allow announcements to be configured against stops by route. Stops may be configured to have a 'Next Stop' and/or 'Arriving At' announcement. The TTS pronunciation is tuned from the desktop to correct any unique or custom pronunciation.

Reminder announcements can be configured where stops are a long distance apart. Connection announcements can be configured for stops where routes intersect. Service alerts can be announced on a regular basis if configured.

We recommend using Connexionz quality TTS instead of recorded voice talent, as our TTS system can be immediately updated to reflect changes in service. This system also supports prerecorded announcements.

All 'Next Stops' will be displayed on connected LCD signage. The 'Next Stop' prefix will be replaced with a 'Bus Stopping' prefix when the 'Stop Request' cord/button is pressed. The stop request indicator will remain on until the doors of the bus are opened.



AVA performs 'dual zone' announcements. This means the destination/route on the outside and next-stop on the inside of the bus. The system also has its own amplifier, and it can integrate a driver microphone. Stop requests can also be integrated into the AVA if required.

AVA audio and text messages are configured using the Route Planner module. Optional Multimedia content is organized using the Media Playlist.

Automatic Passenger Counters (APC)

Good APC data will streamline your NTD reporting. With our system you'll save a lot of time preparing your S10 and MR20 NTD forms. Often our transit agencies are pleasantly surprised when their passenger counts are higher than what is reported by their manual systems.

We have considerable experience installing, and supporting Automatic Passenger Counting (APC) systems. For many years now we use IRIS MATRIX sensors. These sensors are certified to greater than 98% accuracy.

WiFi for buses

Passenger Wi-fi and vehicle connectivity using the existing Cradlepoint modem.

CNX can utilize the existing router and antennas to provide both secure passenger Wi-fi and secure passenger connectivity. The BR600 routers do have some limited features related to individual data throttling but we suspect it should be sufficient for Agencies operations. Most importantly, the data which flows through the ITS system doesn't cross with the data used for Wi-fi. Only one SIM card is needed. Connexionz will work with you during deployment to reconfigure the routers and also open up remote access for Connexionz staff.



The configured Wi-fi will include:

- No need for additional SIMs
- Secure connectivity for both passengers and ITS, with firewalls in between

- Content filtering using OpenDNS
- Ability to show agency “disclaimer”

Data can be throttled for the Wi-fi service as a whole.

Mobile app integration

Mobile Apps are key to disseminating real time information

According to research over 84% of Americans own smartphones. The biggest reason why transit riders don't choose public transport is the risk they won't make their meeting or event on time.

Putting journey planners, real-time ETAs and live maps on your riders phones will greatly enhance your riders' transit experience because it puts them back in control.

Our optional Mobile App will carry your branding while app users enjoy access to the transit industry's most accurate RTPI. Engage with the community more effectively while boosting passengership with a more positive rider experience.

- White label approach means each app has Your desired branding. The app is easily findable in the app/play store. Most rider's intuitive instinct is to search “Metropolitan Tulsa Transit Association” (or similar) in the app store which will allow them to easily reach and download your new app.
- Designed for ease of use in both iOS and Android.
- Serve up the most accurate RTPI while reducing customer service calls.
- Can relay public information, alerts, and bulletins system-wide or on a route and stop level.

The app's functionality directly mimics the website's functionality, creating a familiar and comfortable experience for your passengership. The mobile app has the ability to show the user's current GPS location and the nearest real-time transit options. The photos below are from one of our in-house, white-labelled app solutions for a regional project in Washington.

Real-Time Portal Go-To-Market Support

To help support the rollout of your fixed route public website and applications, Connexionz provides turnkey "go-to-market" support including helpful digital and printable advertising material for your ridership to learn how to best use the solution. Great exposure across local and industry news sources ensures The City of Yakima riders are aware of the new system.

Subscriptions and Alerts mean you don't have to miss your bus again

Riders can create and subscribe to custom email and SMS alerts for buses that are on the way to their stop. These alerts and subscriptions can be set with capturing their “favorite” route, direction/destination, day, and time. This ensures that your passengers only receive the information that they want, thus incentivizing consistent usage.

One important feature of the WebPortal is the ability for a rider to query information based on stop ID. This allows them to easily get ETA information quickly. The pages for each Stop ID can also be used as landings for QR code scans thus, giving standard bus stops a real-time information function.

SMS/IVR Real-Time information

This stop ID information allows for standard bus stop signage to be integrated into the alert system as well. As mentioned, QR codes can be placed upon standard signs to lead users to the proper informational pages. There is also an IVR function for the option to call the posted number for voice information on arrival times, by Stop ID. An SMS option has been included in the pricing and IVR pricing can be requested.

The QR code below is fully functional. To use it you must first scan the code and follow the prompt to the web page shown. You will find the real-time arrival information for stop ID "VT344" there. This is exactly how our stop ID system can use SMS and QR codes to extend your informational reach.

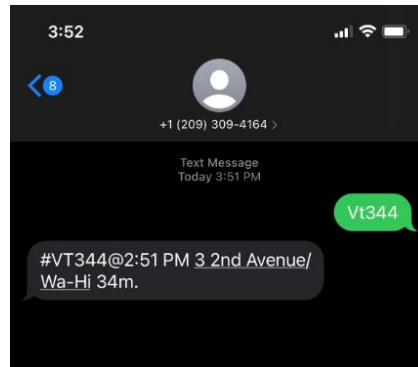


Figure 3 Screenshot – SMS from stop ID text query



Figure 2 Fully Functional Stop ID QR Code

Analysis

Analysis crunches gigabytes of transit data into comprehensive and actionable information. It's easy to use and requires no additional agency resources while it helps keep transit stakeholders informed of efforts to drive operational efficiencies and qualitative improvements.

Data can be exported into third-party applications and services. Analysis provides all of the raw data output required for NTD reporting.

Data from integrated systems, such as farebox or electronic fare applications, can also be reported. Exception reporting enables more accurate presentations and analysis of data and information.

Many standard reports are available, and since your data is exportable into MS Excel pivot tables, it is easy to create any report that you wish.

Recently, Connexionz customer Pasadena Transit was able to report 11% in monthly on-time performance directly after their Connexionz deployment. Early buses dropped quickly from almost 6% of arrivals to nearly 0%. With CNX Analysis, you can find your opportunities for improvement, and you can detail that improvement for agency stakeholders.

Dispatch v. Analysis

TransitManager collects, processes and stores very large amounts of data - bus, driver, and trip-by-trip detail. This data is immediately accessible in Dispatch, while historical data and analysis for system-wide or per route reporting is performed by Analysis.

Dispatch can be utilized to compile information around incidents, like a speeding driver, a bus accused of damaging a parked car, or a passenger claiming his bus never turned up. Individual trip data accessible in Dispatch will include times against location, driver, speed, and trip performance by timing point.

In Analysis, the analysis system, trip data is transferred nightly and available the next day, with the exception of real-time vehicle passenger loadings. Maintenance information is stored by bus, including reporting response rates and ODBII (engine management) data. Schedule data based on travel times and passenger counts are stored by date and trip number.

TransitManager maintains all of your data for perpetuity. There are no charges for the generation of ANY reports available through the supplied service analysis and reporting suite; all data is owned by you, all

reports are yours to produce whenever you need them. In fact, TransitManager generates nearly all of the data required for NTD reporting; including mileage and ridership statistics.

Exception Reporting

Exception reporting is a key feature required to maintain accurate and reliable reports by filtering out anomalous data.

Exceptions may include missed trips, late assignments, early departures, late departures, time point early departures, and time point late departures.

Exception reports are agency configurable with the help of our data scientists, who will customize report outputs to suit your specific needs.

Analysis applies transit data to a preformatted in an OLAP cube where results can then be presented as an Internet service.

The summary report for all exceptions provides management with an instant overview of how the system operated for a particular day.

The Notes column to the right of the screen displays info the Dispatcher has input for a trip, such as a breakdown or a driver no-show. The Dispatch interface allows management to accept or decline each exception, as consequences to exceptions can often apply to drivers or to fleet operations SLAs.

“With Connexionz Daily Exception tool we were able to immediately decrease early departures to less than 1% of our trips.”

Sebastian Hernandez

Pivot Tables

Analysis utilizes pivot tables to present report data that is viewable from a web browser.

Data can be moved around within the screen (pivoting it) so that users can best reorganize data, look for specific information or details, and create reports.

The user can easily make changes to this OLAP cube to change the way the data is displayed and organized.

This cube provides information about bus travel times, including a number of measures that have an aggregate function assigned to them (average, minimum, maximum, and percentage). Travel times can be viewed for all companies, routes, services, and trips and any combination of total values.

Standard Report Screenshots

Communications Performance

- This report plots response times to customer queries.

Travel Times By Day

- When reviewing travel times, we see reduced times during school holidays and light traffic conditions.

Pivot Table - Exception Report Drill Down

- This pivot table view below shows a more detailed analysis of the exception report summary displayed above. In this view, we have expanded the parameters to select just the inbound route, the scheduled departure time (whole hours—or expanded to minutes).

The report covers the trip segment from Sky City Terminal stop to Great Sights Quay St stop between 0700 and 0900. The early departures ranged from 3.8 minutes to almost 10 minutes. By comparison the 0500 departures averages 3 minutes early.

On Time Reports

The definitions are agency configurable. In this case:

- Early = actual departure more than 5 minutes ahead of schedule
- On Time = actual departure less than 5 minutes ahead and less than 5 minutes behind schedule
- Late = actual departure more than 5 minutes behind schedule
- Unknown = the trip was not operated; the trip was reset because of a problem; or the vehicle was not detected departing the Start Point

Departure Difference by Month and by Operator

The analysis system also provides a daily summary for the system administrator that is extracted to demonstrate early and late departures.

Since analysis, with its OLAP DATA cubes and pivot tables, is so highly customizable and configurable, we can configure and automate virtually any report you need.

Tab Sa e ontra t an Ter
an on ition



Tab 6– Sample Contract and Terms and Conditions

Connexionz accepts and have no changes or points to raise.

Tab Se en



Tab 7 – Required Forms

Included below are any additional completed forms required in this RFP.

- *Buy America Acknowledgments and Certificate*
- *Fly America Statement*
- *Lobbying Restrictions Certification*

A.4 BUY AMERICA REQUIREMENTS

49 U.S.C. 5323(j)

49 C.F.R. part 661

BUY AMERICA CERTIFICATION

Contractor agrees to comply with 49 USC § 5323(j) and 49 CFR Part 661, which provide that federal funds may not be obligated unless steel, iron and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR § 661.7. A general public interest waiver from the Buy America requirements applies to microprocessors, computers, microcomputers, software or other such devices, which are used solely for the purpose of processing or storing data. This general waiver does not extend to a product or device that merely contains a microprocessor or microcomputer and is not used solely for the purpose of processing or storing data.

Separate requirements for rolling stock are set out at 49 USC § 5323(j)(2)(C) and 49 CFR § 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

The Proposer must submit to Yakima Transit the appropriate [Buy America Certification](#) with all offers on FTA-funded contracts, except those subject to a general waiver. Proposals that are not accompanied by a properly completed Buy America certification are subject to the provisions of 49 CFR § 661.13 and may be rejected as nonresponsive.

Applicability to Contracts

FTA's Buy America law and regulations apply to projects that involve the purchase of more than \$150,000 of iron, steel, **manufactured goods**, or rolling stock to be delivered to the recipient to be used in an FTA assisted project. FTA cautions that its Buy America regulations are complex. Recipients can obtain detailed information on FTA's Buy America regulation at: The Federal Transit Administration's Buy America website: <https://www.transit.dot.gov/buyamerica>

Flow Down

The Buy America requirements flow down from FTA recipients and subrecipients to first tier contractors, who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

Model Clause/Language

The Buy America regulation at 49 C.F.R. § 661.13 requires notification of the Buy America requirements in a recipients' bid or request for proposal for FTA funded contracts. Recipients can draw on the following language for inclusion in their federally funded procurements. Note that recipients are responsible for including the correct Buy America certification based on what they are acquiring. Recipients should not include both the rolling stock and steel, iron, or manufactured products certificates in the documents unless acquiring both in the same procurement.

Buy America

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. part 661, which provide that Federal funds may not be obligated unless all steel, iron, and manufactured products used in FTA funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. § 661.7. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. § 661.11.

The [bidder or offeror] must submit to City of Yakima the appropriate Buy America certification below with its [bid or offer]. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as nonresponsive.

In accordance with 49 C.F.R. § 661.6, for the procurement of steel, iron or manufactured products, use the certifications below.

COMPLETE AND UPLOAD WITH PROPOSAL

Certificate of Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(1), and the applicable regulations in 49 C.F.R. part 661.

Date: _____

Signature: _____

Company: ___Connexionz_____

Name: __Tony Kan_____

Title: ___Executive Chair _____

Certificate of Non-Compliance with Buy America Requirements

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j), but it may qualify for an exception to the requirement pursuant to 49 U.S.C. 5323(j)(2), as amended, and the applicable regulations in 49 C.F.R. § 661.7.

Date: _____

Signature: _____

Company: _____

Name: _____

Title: _____

A.12 FLY AMERICA
49 U.S.C. § 40118
41 C.F.R. part 301-10
48 C.F.R. part 47.4

Applicability to Contracts

The Fly America requirements apply to the transportation of persons or property, by air, between a place in the U.S. and a place outside the U.S., or between places outside the U.S., when the FTA will participate in the costs of such air transportation. Transportation on a foreign air carrier is permissible when provided by a foreign air carrier under a code share agreement when the ticket identifies the U.S. air carrier's designator code and flight number. Transportation by a foreign air carrier is also permissible if there is a bilateral or multilateral air transportation agreement to which the U.S. Government and a foreign government are parties and which the U.S. DOT has determined meets the requirements of the Fly America Act.

Flow Down Requirements

The Fly America requirements flow down from FTA recipients and subrecipients to first tier contractors who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

Model Clause/Language

The relevant statutes and regulations do not require any specific clause or language that recipients use in their third party contracts. A sample clause is provided for Federal contracts at 48 C.F.R. 52.247-63. Recipients can draw on the following language for inclusion in their federally funded procurements.

FTA proposes the following language, modified from the Federal clause.

Fly America Requirements

a) *Definitions.* As used in this clause--

“International air transportation” means transportation by air between a place in the United States and a place outside the United States or between two places both of which are outside the United States.

“United States” means the 50 States, the District of Columbia, and outlying areas.

“U.S.-flag air carrier” means an air carrier holding a certificate under 49 U.S.C. Chapter 411.

b) When Federal funds are used to fund travel, Section 5 of the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118) (Fly America Act) requires contractors, recipients, and others use U.S.-flag air carriers for U.S. Government-financed international air transportation of personnel (and their personal effects) or property, to the extent that service by those carriers is available. It requires the Comptroller General of the United States, in the absence of satisfactory proof of the necessity for foreign-flag air transportation, to disallow expenditures from funds, appropriated or otherwise established for the account of the United States, for international air transportation secured aboard a foreign-flag air carrier if a U.S.-flag air carrier is available to provide such services.

c) If available, the Contractor, in performing work under this contract, shall use U.S.-flag carriers for international air transportation of personnel (and their personal effects) or property.

d) In the event that the Contractor selects a carrier other than a U.S.-flag air carrier for international air transportation, the Contractor shall include a statement on vouchers involving such transportation essentially as follows:

COMPLETE AND UPLOAD WITH PROPOSAL

Statement of Unavailability of U.S.-Flag Air Carriers

International air transportation of persons (and their personal effects) or property by U.S.-flag air carrier was not available or it was necessary to use foreign-flag air carrier service for the following reasons. See FAR § 47.403. *[State reasons]:*

(End of statement)

e) The Contractor shall include the substance of this clause, including this paragraph (e), in each subcontract or purchase under this contract that may involve international air transportation.

(End of Clause)

A.14 LOBBYING RESTRICTIONS

31 U.S.C. § 1352
2 C.F.R. § 200.450
2 C.F.R. part 200 appendix II (J)
49 C.F.R. part 20

Applicability to Contracts

The lobbying requirements apply to all contracts and subcontracts of \$100,000 or more at any tier under a Federal grant. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this agreement, the payor must complete and submit the Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Flow Down

The lobbying requirements mandate the maximum flow down pursuant to Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352(b)(5).

Model Clause/Language

49 C.F.R. part 20, Appendices A and B provide specific language for inclusion in FTA funded third party contracts as follows:

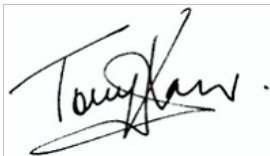
Lobbying Restrictions

COMPLETE AND UPLOAD WITH PROPOSAL

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.



Signature of Contractor's Authorized Official

____ Tony Kan Executive Chair _____ Name and Title of Contractor's Authorized Official

____ 15/09/23 _____ Date

Tab Eight



Tab 8 - Cost Proposal as identified in Section VI.

COST PROPOSAL FORM
RFP #12324P
Onboard Integrated Technology System for Yakima Transit

REVISED

The CONTRACTOR, in accordance with the RFP Specifications for providing an Onboard Information Technology System has carefully examined the project requirements, the scope of the proposed work, and being familiar with all the conditions surrounding the project, hereby propose to perform all work required for a complete project for the amount listed below.

The amounts listed below are the amounts for a complete project and will be scored according to Section VII. Evaluation and Contract Award. Any Optional benefits that might enhance the system maybe added on a separate sheet and uploaded under Tab 8 titled Cost Proposal but will not be considered as part of the completed project as required in the specifications or in the evaluation scoring.

ITEMIZED Project Pricing for EXISTING BUSES		AMOUNT	X	QUANTITY OF BUSES	TOTAL
1a	Hardware Per Bus without new interior signs (minus modems,cameras,antennas,exterior signs)	\$ 7,135.08		24	\$ 171,242.00
1b	Hardware Per Bus with new interior signs (minus modems,cameras,antennas,exterior signs)	\$ 7,825.08		24	\$ 187,802.00
2	Software License	\$ 2,385.73		24	\$ 57,257.50
3	Installation Cost	\$7,283.72		24	\$ 174,809.20
4	Travel Costs	\$ 48,142.50		1	\$ 48,142.50
5	One Year Software and Support Fee	\$ -		1	\$ -
DISCOUNT					\$ -
TOTAL PROJECT COST Without Interior Signs					\$ 451,451.20
TOTAL PROJECT COST With Interior Signs					\$ 468,011.20

ITEMIZED Project Pricing for NEW BUSES (up to 6)		AMOUNT	X	QUANTITY OF BUSES	TOTAL
1	Hardware Per Bus without new interior signs (minus modems,cameras,antennas,exterior signs)	\$ 7,135.08		1	\$ 7,135.08
	Hardware Per Bus with new interior signs (minus modems,cameras,antennas,exterior signs)	\$ 7,825.08		1	\$ 7,825.08
2	Software License	\$ 2,385.73		1	\$ 2,385.73
3	Installation Cost	\$ 2,505.00		1	\$ 2,505.00
4	Travel Costs	\$6,662.30		1	\$ 6,662.30
5	One Year Software and Support Fee	\$0.00		1	\$ -
6	OPTIONAL - Real Time Informational Signs	\$2,572.50		1	\$ 2,572.50

SOFTWARE AND SUPPORT		AMOUNT	X	QUANTITY OF BUSES	TOTAL
Year 2 - Software License and Support Fee		\$2,416.52		1	\$ 57,996.38
Year 3 - Software License and Support Fee		\$2,537.34		1	\$ 60,896.19
Year 4 - Software License and Support Fee		\$2,664.21		1	\$ 63,941.00
Year 5 - Software License and Support Fee		\$2,797.42		1	\$ 67,138.05
TOTAL WITHOUT OPTIONAL INTERIOR SIGNS (includes initial project cost plus Five Years Support)					\$ 701,422.83

**COST PROPOSAL FORM
RFP #12324P
Onboard Integrated Technology System for Yakima Transit**

REVISED

LESS DISCOUNT	30%	\$ 213,132.83
TOTAL WITHOUT OPTIONAL INTERIOR SIGNS (includes initial project cost plus Five Years Support)		\$ 488,290.00

COST PROPOSAL FORM PG 2 OF 2

Hourly Rates for Offsite Services	Hourly Rate
Offsite / Remote - Program Manager	\$ 175.00
Offsite / Remote - Technical Specialist	\$ 110.00
Offsite / Remote - Other _____	\$ 175.00
 Blended Hourly Rate	 \$ 151.01

On-Site Rate

The "blended hourly rate" for post-installation services shall be a single hourly rate encompassing all personnel classifications that may be required for completion of any given post-installation task under the resulting contract. This blended hourly rate shall be a fully loaded rate to include, but not be limited to, all salary, benefits, overhead, profit, and local travel costs (defined as travel within Yakima County, WA).

Provide a separate quote for one year of software assurance based on a five (5) year contract, billable on a yearly basis and submit with Cost Proposal Form under Tab 8.



connexionz
SMARTER TRANSIT SOLUTIONS