

City Councilor Website Development Guide

Phase 1: Project Setup & Foundation (Days 1-3)

1.1 Environment Setup

- Set up Node.js development environment
- Install MongoDB locally or set up MongoDB Atlas account
- Create project directory structure
- Initialize Git repository
- Set up package.json for both frontend and backend

1.2 Backend Foundation

- Create Express.js server structure
- Set up basic middleware (CORS, helmet, body-parser)
- Configure MongoDB connection
- Set up environment variables (.env file)
- Create basic server entry point

1.3 Frontend Foundation

- Initialize React application
- Set up folder structure (components, pages, services, utils)
- Install necessary dependencies (React Router, Axios, etc.)
- Configure basic routing structure
- Set up CSS framework/styling approach

Phase 2: Database Design & Models (Days 4-5)

2.1 Database Schema Design

- Design MongoDB collections based on PRD requirements
- Plan relationships between collections
- Create database schema documentation

2.2 Mongoose Models Creation

- Create User model (citizens and admins)
- Create Job Posting model
- Create Job Application model
- Create Solicitation Request model
- Create Announcement model
- Create Accomplishment model
- Create Local Policy model
- Create Feedback model
- Create Rice Distribution Record model

2.3 Database Indexing

- Set up indexes for performance optimization
- Configure text search indexes where needed

Phase 3: Authentication System (Days 6-8)

3.1 Backend Authentication

- Implement JWT token generation and verification
- Create password hashing using bcrypt
- Build registration API endpoint
- Build login API endpoint
- Create middleware for route protection
- Implement role-based access control

3.2 Frontend Authentication

- Create registration form with validation
- Create login form
- Implement token storage and management
- Create protected route components
- Build authentication context/state management

3.3 User Profile Management

- Create profile viewing functionality
- Implement profile update features
- Add password change functionality

Phase 4: Public Pages Development (Days 9-14)

4.1 Home Page

- Create hero section with image slideshow
- Build quick actions navigation
- Implement recent announcements section
- Add recent accomplishments display
- Create events calendar view
- Add community feedback section

4.2 Announcements Page

- Create announcement listing with card layout
- Implement category filtering (Update/Event)
- Add photo gallery support (up to 4 images)
- Build announcement detail view
- Add pagination if needed

4.3 Accomplishments Page

- Create accomplishments listing
- Implement photo display functionality
- Add completion date sorting
- Build accomplishment detail view

4.4 Local Policies Page

- Create ordinances and resolutions listing
- Implement PDF viewer integration
- Add metadata display (title, type, date)
- Create search and filter functionality

4.5 About Us Section

- Build leadership page with staff information
- Add contact information display
- Integrate social media links (Facebook, email)
- Create public feedback viewing section

4.6 Citizen Guide

- Create step-by-step process guides
- Design user-friendly navigation
- Add visual aids and instructions
- Implement responsive design for mobile

Phase 5: Services Section (Days 15-20)

5.1 Job Openings Module

- Create public job listings view
- Build job detail pages
- Implement job application form (authenticated users)
- Add duplicate application prevention
- Create application status tracking
- Set up automatic rejection for closed positions

5.2 Solicitation Requests Module

- Build public approved requests viewing
- Create solicitation request form (authenticated users)
- Implement file upload for solicitation letters
- Add request status tracking
- Create category-based filtering
- Build organization type selection

5.3 Monthly Rice Distribution

- Create public information display
- Show selected barangays list
- Add distribution schedule display
- Implement automatic barangay selection

Phase 6: Administrative Dashboard (Days 21-26)

6.1 Admin Dashboard Core

- Create admin login interface
- Build analytics overview dashboard
- Implement system statistics display
- Add navigation menu for admin functions

6.2 Content Management System

- Build announcement management (CRUD operations)
- Create accomplishment management
- Implement local policy management
- Add photo upload and management
- Create rich text editor integration

6.3 Job Management System

- Create job posting management
- Implement applicant viewing and approval
- Add job status management (open/closed)
- Build applicant communication system

6.4 Solicitation Management

- Create request review interface
- Implement approval workflow
- Add request status management
- Build communication system for applicants

6.5 Rice Distribution Management

- Create barangay selection interface
- Implement schedule setting
- Add distribution record keeping
- Build notification management

Phase 7: Communication Features (Days 27-29)

7.1 SMS Integration Setup

- Research and select SMS service provider
- Integrate SMS API
- Create SMS notification functions
- Test notification delivery

7.2 Feedback System

- Build public feedback viewing
- Create feedback submission form
- Implement admin response system
- Add feedback management for admins

7.3 Notification System

- Implement job application notifications
- Add solicitation request notifications
- Create rice distribution announcements
- Test all notification triggers

Phase 8: File Management & Storage (Days 30-31)

8.1 File Upload System

- Implement image upload functionality
- Add document upload for PDFs
- Create file validation and security
- Set up file storage solution (cloud or local)

8.2 File Management

- Build file viewing capabilities
- Implement file deletion and updates
- Add file size and type restrictions
- Create backup and recovery system

Phase 9: Security Implementation (Days 32-33)

9.1 Security Hardening

- Implement input sanitization
- Add XSS protection
- Configure HTTPS/SSL
- Set up rate limiting
- Add file upload security scanning

9.2 Access Control Validation

- Test role-based permissions
- Validate session security
- Implement data validation everywhere
- Add security headers

Phase 10: Testing & Quality Assurance (Days 34-37)

10.1 Unit Testing

- Write tests for API endpoints
- Create frontend component tests
- Test authentication flows
- Validate form submissions

10.2 Integration Testing

- Test complete user workflows

- Validate SMS notifications
- Test file upload processes
- Check admin functionalities

10.3 User Acceptance Testing

- Test all user scenarios from PRD
- Validate mobile responsiveness
- Check cross-browser compatibility
- Performance testing

Phase 11: Performance Optimization (Days 38-39)

11.1 Frontend Optimization

- Implement code splitting
- Optimize images and assets
- Add lazy loading
- Minimize bundle sizes

11.2 Backend Optimization

- Optimize database queries
- Implement caching strategies
- Add database indexing
- Monitor API response times

Phase 12: Deployment Preparation (Days 40-42)

12.1 Production Environment Setup

- Set up cloud hosting environment
- Configure production database
- Set up SSL certificates
- Configure domain and DNS

12.2 Deployment Pipeline

- Create build scripts
- Set up CI/CD pipeline
- Configure environment variables
- Test deployment process

12.3 Monitoring & Maintenance Setup

- Set up error tracking
- Configure logging systems
- Implement backup strategies
- Create update procedures

Phase 13: Final Testing & Launch (Days 43-45)

13.1 Production Testing

- Test all features in production environment
- Validate SMS service in production
- Check all integrations
- Perform load testing

13.2 Documentation & Training

- Create user manuals
- Document admin procedures
- Prepare training materials
- Create troubleshooting guides

13.3 Go-Live Activities

- Final deployment
- Data migration if needed
- User training sessions
- Launch announcement

Post-Launch Activities

Immediate (Week 1-2)

- Monitor system performance
- Address any urgent bugs
- Collect user feedback
- Provide user support

Short-term (Month 1-3)

- Performance optimization based on usage
- Feature enhancements based on feedback

- Security updates and patches
- User training and support

Long-term (Ongoing)

- Regular system maintenance
 - Feature additions and improvements
 - Security updates
 - Performance monitoring and optimization
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